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These are of the "Bug" type which won the $5000. *Gould Prize*, the 132 mile race New York to Poughkeepsie and return, and every other race entered last season, proving them the most phenomenal boats of the year.

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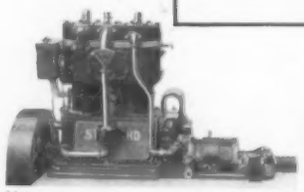

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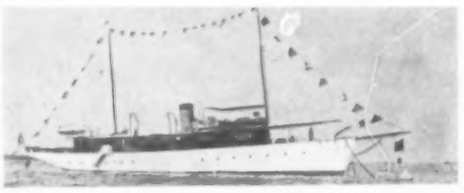
BARGAIN—No. 1210—Attractive auxiliary sloop 40 x 10 x 6 feet draught; in particularly fine condition throughout; sails new this year, 7-H P. engine. Full particulars Gielow & Orr, 52 Broadway, New York.

A BONA FIDE BARGAIN—No. 2367—Auxiliary schooner, 60 x 15 x 5½ feet. 18-H.P. Standard engine. Full electric equipment. Sleeps 2 forward, 6 aft. Large stateroom. Full particulars, Gielow & Orr, 52 Broadway, New York.

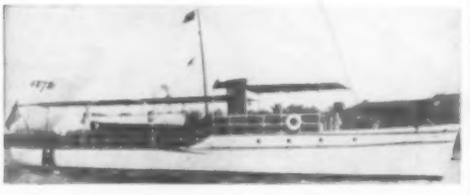
GENUINE BARGAIN—No. 107—88 x 22 x 9 feet draught; sails used only two weeks. One double, 4 single staterooms, 5 berths and 4 transoms, bath and 2 toilets. Apply to Gielow & Orr, 52 Broadway, New York.

FOR SALE OR CHARTER—No. 2808—Twin screw motor yacht 90 x 14 x 3.2 draught. Very desirable for Southern cruising. Deck dining saloon, 3 double staterooms, bath and main cabin. Plans and additional information from Gielow & Orr, 52 Broadway, New York.

FOR SALE—No. 2000—65 x 15 x 9.6 admirable cruising and racing auxiliary schooner, 2 staterooms, sails new 1910, 18-H.P. motor. Price, plans, etc. Gielow & Orr, 52 Broadway, New York.



FOR SALE OR CHARTER—No. 1656—Thoroughly modern and up-to-date 130 foot steam yacht; in excellent condition throughout. Attractively fitted and furnished. Dining saloon; social hall, 6 staterooms, 2 baths and 3 toilets for owner Apply Gielow & Orr, 52 Broadway, New York.



FOR CHARTER—NO. 2285—Attractive twin-screw 70-foot cruising motor yacht. Especially adapted for Southern work. One double stateroom, 5 berths in cabin. Excellent ventilation. Complete equipment. Additional particulars, etc., from Gielow & Orr, 52 Broadway, New York.

FOR SALE—No. 3581—Exceptionally fine 40 foot cruiser. 3 feet 6 inches draught. 16-20-H.P. Standard motor; double stateroom; dynamo and storage batteries. Additional particulars, etc., from Gielow & Orr, 52 Broadway, New York.

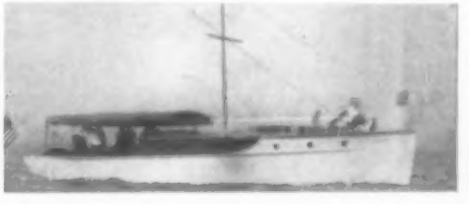
FOR SALE—No. 3584—Attractive and fast twin screw day cruiser 50 x 8 x 3.6 draught. Speed 20 miles. Full particulars Gielow & Orr, 52 Broadway, New York.

SACRIFICE—No. 3496—100 foot twin screw house-boat. Main saloon, 7 large staterooms, bath and 2 toilets; electric lights, running water, etc. Full particulars Gielow & Orr, 52 Broadway, New York.

FOR SALE—No. 3159—Modern 98 foot twin screw motor yacht; dining saloon on main deck; 4 staterooms, 2 baths. Full particulars, plans, etc. Gielow & Orr, 52 Broadway, New York

NO. 75—200 foot over all American built oceangoing steam yacht. Seven staterooms, 3 baths, 3 toilets in owner's quarters. Price low; will charter. Full particulars, Gielow & Orr, 52 Broadway, New York.

FOR SALE—No. 3106—Handsomely finished and furnished 70 foot motor yacht, 3.5 feet draught. Pilot house, main cabin, 2 staterooms, and bath. Standard motor. For plans, etc. Apply to Gielow & Orr, 52 Broadway, New York.



FOR SALE—No. 3592—Handsome 46 x 10 x 3 feet draught. Built, 1911. Mahogany finish. 30-H.P. 4-cylinder motor. Price and full particulars from Gielow & Orr, 52 Broadway, New York.

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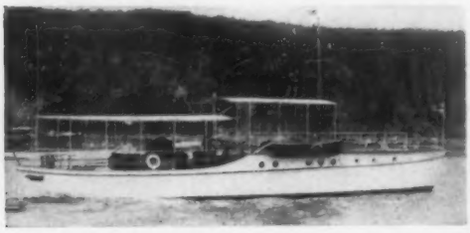
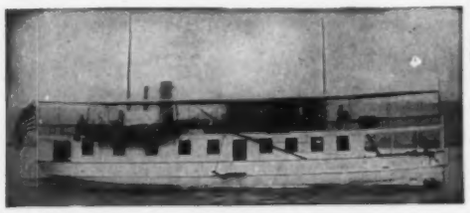


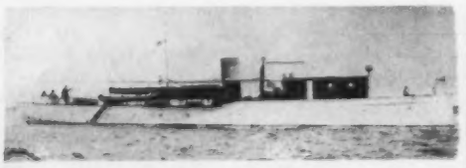
NO. 7488—FOR SALE OR CHARTER—65 ft. twin screw raised deck cruiser; two 20-H.P. motors. Double stateroom, saloon, bath, etc. Unusual opportunity. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

NO. 7905—FOR SALE AND CHARTER—Very handsome 82-ft. motor yacht, built 1910. Standard engine 100-H.P. Speed, 12 miles. Dining room forward. Aft two double staterooms, bathroom, main cabin. Offer desired. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

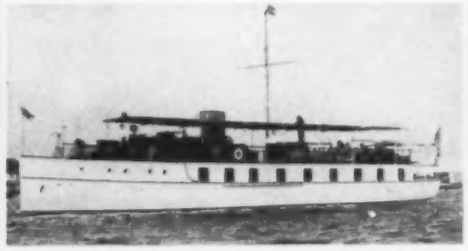


NO. 1837—FOR SALE AND CHARTER—This attractive power houseboat 87x76x23x4 ft., built 1906. Three large staterooms, three bathrooms. Saloon below sitting room on deck. Two 75-H.P. motors. Complete outfit. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

NO. 7029—FOR SALE—Owner building larger yacht, one of the best yachts of her size; 110 ft. x 17 ft. 6 in., steel construction, two 6-cyl. 110-H.P. Standard reversible engines. Speed, 12½ knots. Finished in mahogany and teak. Large deck space and all rooms of good size. Dining saloon, main saloon, four staterooms, bathroom, toilet, etc. Cutter, dinghy, and launch. Electric lighting. Most complete equipment. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.



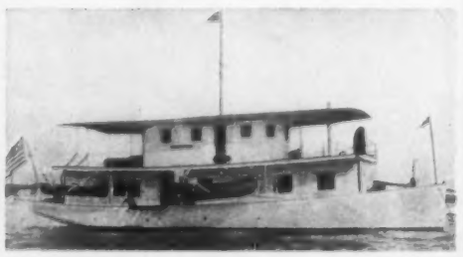
NO. 7676—110-ft. twin screw power yacht, two 150-H. P. motors. Speed 13 knots. Four staterooms, bath etc. Very able, desirable craft. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.



FOR SALE OR CHARTER, can be chartered delivery at Miami, for the month of April, at a reasonable figure. Unusual opportunity to charter practically a new boat of shallow draft. Well suited for Florida waters, 90 ft. overall, 17 ft. 6 in. draft. Built 1911. Twin screw 2 60-H. P. Craig motors. Three staterooms, two of them double. Saloon and sitting-room on deck. Fully equipped in every way. For particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York.

NO. 7074—FOR SALE OR CHARTER, modern motor yacht, 80x73x13, built by Lawley; 100-H.P. Standard motor; 2 large double staterooms, main saloon, dining saloon on deck, complete equipment. Good condition. Speed, 13 knots. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

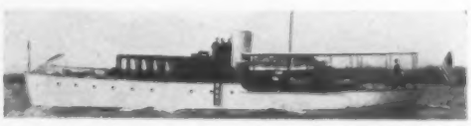
NO. 1808—FOR SALE—Power houseboat. Perfect condition. 123x115x17.8x3.6 ft. Built 1901. Five staterooms, two baths, large saloon. Twin screw, two 75-H.P. Standard motors. Electric light. Speed, 9 knots Unusual opportunity. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.



NO. 1856—Modern houseboat, 68x23x4 ft. Two 40-H. P. motors, speed 8 miles. Acetylene gas, three staterooms, each with two berths, two staterooms on upper deck, dining saloon, smoking room, bath room. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

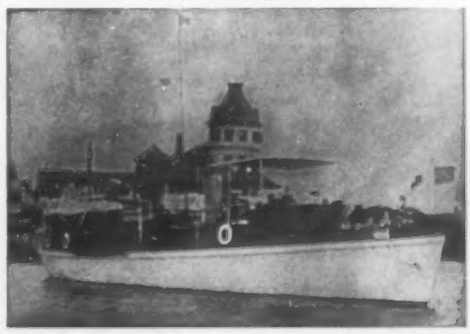
NO. 7334—FOR SALE OR CHARTER AT ATTRACTIVE PRICES—65x13x3.9-ft. draught. Speed, 11 to 12 miles. Two Standard engines. Roomy and comfortable. Large after and bridge decks. Particularly well ventilated. Sleep six owner's party. Launch, dinghy, electric lights. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

NO. 7674—FOR SALE OR CHARTER, MODERN MOTOR YACHT—75-ft. twin screw raised deck cruiser; two 30-H. P. 4-cylinder engines. Two double staterooms, bath room and main cabin. Launch, electric lights, etc. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.



NO. 7871—Modern 85-ft. twin screw power yacht. Speed, 12 to 14 miles. Standard motors. Handsomely finished and furnished. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

NO. 7725—FOR SALE—Able and roomy, twin screw, raised deck cruiser. Built 1909. 75x15x4-ft. draught. Two double staterooms, bath room, large main cabin with extension transoms, large galley; engine room and forecastle with officer's stateroom. Standard engines, electric lights. Solid mahogany interior. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.



NO. 7356—Desirable cruising power yacht for charter, 80x76x13x4-ft. draught. Two double staterooms, large saloon, with two berths, bathroom, all conveniences; 6-cylinder 20th Century motor, new 1910; speed, 12 miles. Completely fitted. For further particulars apply to Tams, Lemoine & Crane, 52 Pine St., New York City.

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This auxiliary schooner is generally considered the best combined Florida and coast cruiser afloat. She was built for service in Southern waters in the winter, and her comparatively light draft makes her an ideal boat for this purpose. Her headroom of 7 feet, combined with direct skylight ventilation to all rooms below, makes her an exceptionally cool vessel in warm climates.

Her owner also desired to cruise on hunting trips, etc., in Northern waters on the Labrador coast, and for that reason she was most strongly and carefully constructed, and fitted with steam heat throughout.

Under power she has the exceptional speed of nine miles per hour, so that in fog or for long runs in calm weather, she will do about as well as the average gasoline cruising motor yacht.

Her owner has fitted her with every convenience which his long experience in yachting, big game shooting, and fishing has suggested. Her finish below decks is very fine, the owner's room being paneled in silverwood. For bad weather a special feature is the combined companionway and deck house, where three or four people can sit on deck without exposure to the weather. She is faster under power than any other auxiliary schooner fitted with gasoline motor, and has more headroom and better ventilation than any yacht of her size. She is carefully equipped for long cruises, hunting and fishing trips. A good Florida cruiser and suitable for coast work for summer and fall on account of her heavy construction, large engine power and good beam. Her owner prefers to sell, but will charter, as he expects to be abroad for about two years. For further information, prices, etc., apply to Cox & Stevens, 15 William Street, New York.

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Length Over All -	106 feet 6 inches
Length Water Line -	75 feet
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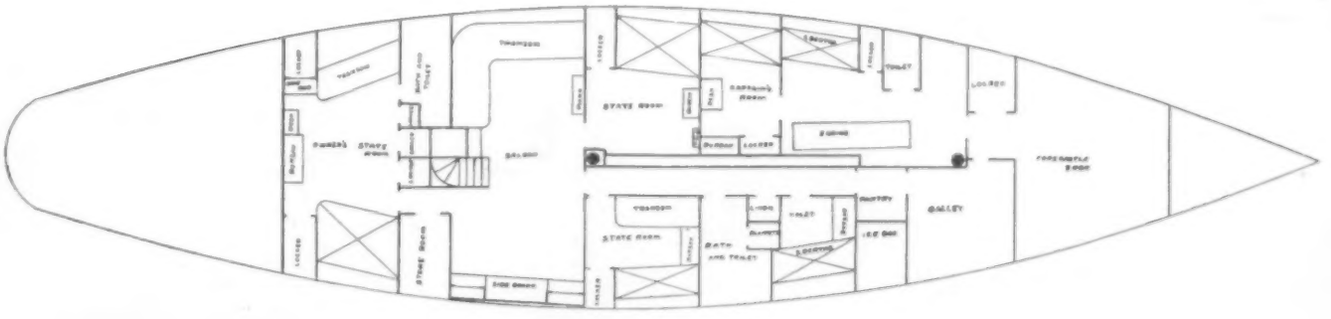

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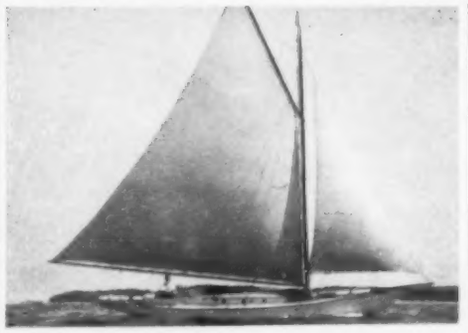

FOR SALE—No. 11117—Keel Auxiliary Sloop 36 feet over all, 25 feet water line, 9 feet beam, 5½ feet draught. Lead ballast. Copper fastened. Cabin berths 2. Galley. 4½-H.P. Eagle engine, installed 1907, gives speed of 5 miles per hour. Completely equipped, including new sails and rigging 1910. 10-foot tender, etc. Low price, or will put in part payment for keel auxiliary yawl about 30 feet water line. Apply o Stanley M. Seaman, 220 Broadway, New York.

NO. 782—For Sale — Keel knockabout, 34 ft. over all, 21 ft. length water line, 7 ft. 6 in. beam, 5 ft. draught, designed by Crowninshield in 1900. 3,500 pounds outside lead, cabin with two transoms, 4 ft. 6 in. headroom,

cushions, full suit of sails, solid spars, tender. Is a particularly able craft and very stiff and easily handled. Apply to John G. Alden, Room 16, No. 27 Kilby St., Boston, Mass.

FOR SALE at reasonable price, one 300 H.P. six-cylinder single-acting reversible Standard engine. Has been in use one year and better than new. Reason for sale, am changing Standard for my own make. Also have one Standard lighting outfit in A-1 shape. Will sell both or separately as purchaser may require.

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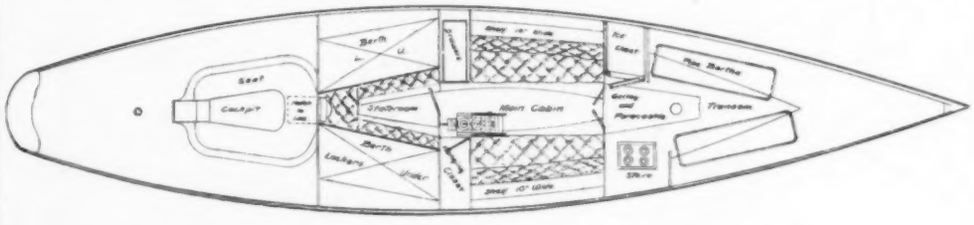
NEW 54-H.P. 6-cylinder Elbridge engine just from factory. Aluminum manifolds, base and cylinder heads. Extra finish throughout. Built for Mr. Coleman du Pont of Wilmington, Del. Exchanged for one of larger power. Price $700. Emerson Engine Co., Alexandria, Va.

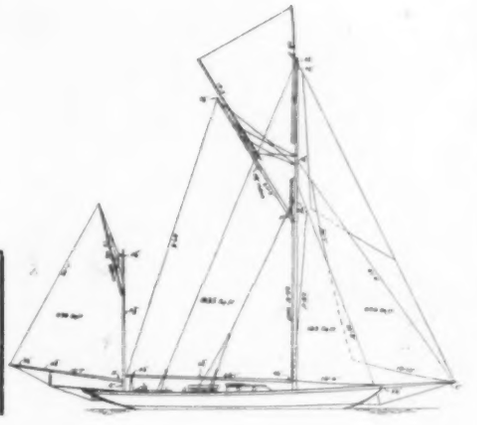
BIG BARGAIN. Yacht Tender, 16 feet long; built by Gas Engine & Power Company; Naptha Engine; Cedar Hull, Mahogany Trim and grating; finished bright, all brass fixtures; first class condition. Cost $900. Sell $250. Whitaker, 1025 Real Estate Trust Building, Philadelphia, Penna.

WE have for sale a steam yacht 100 ft. long, 15 ft. wide, drawing 5 ft. 9 in., with new deck houses, new decks and rails, bulwarks, new boiler and shaft, and the entire equipment in perfect condition.

Also one 55-ft. houseboat, 12-ft. beam, a new boat in the best of condition. The New London Marine Iron Wks. Box 723, New London. Conn.



NO. 265—FOR SALE—High grade auxiliary yawl 51 feet 8 inches over all, 36 feet length water line, 11 feet 4 inches beam, 7 feet 6 inches draught, 7 tons outside lead ballast. Built in strongest possible manner for offshore cruising, double stateroom aft, main cabin, toilet and large galley. Over $1,500.00 spent on boat 1911, including new 15-H.P. Lackawanna engine, complete set of Wilson and Silsby sails, new upholstery, electric lights, completely equipped for extensive cruising. Most exceptional condition throughout. Apply to J. G. Alden, 27 Kilby Street, Boston, Mass.



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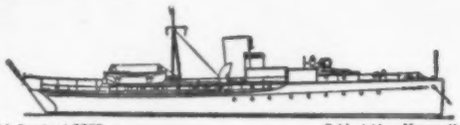

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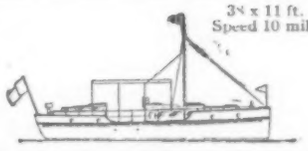

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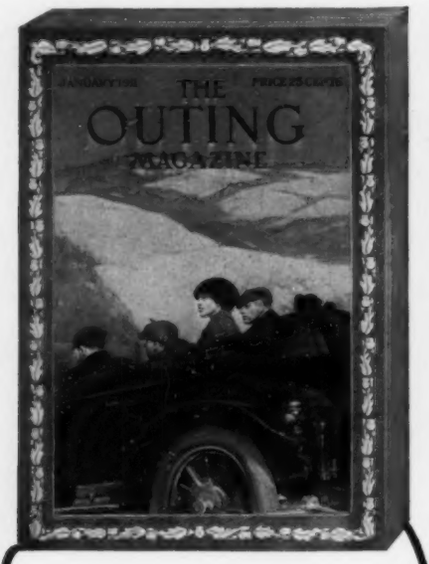

¶ The January issue leads the way for the big features that are planned for OUTING in 1912.

¶ THE KILLING POWER OF RIFLES by *Horace Kephart;* A FEW ACRES AND INDEPENDENCE by *E. P. Powell;* THE MOROCCAN AND HIS LAND by *Charles W. Furlong;* and WHAT IT COSTS TO KEEP AN AUTOMOBILE.

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The New Magazine **FLOWERS** Nothing But Flowers

Do you love flowers?
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If you want to know more and have more of the faithful flower friends of the garden and of the fields and woods, you will be much pleased with the charming new magazine "FLOWERS," published monthly by The Suburban Press, publishers of SUBURBAN LIFE. The Magazine "FLOWERS" is made exclusively for flower-lovers. Nothing in it from cover to cover but delightful articles about flowers and wonderful photographs of flower subjects. "FLOWERS" is absolutely unique in the magazine field.

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F. H. NUNNS, Manager

In the Captain's Cabin

NOW that we have taken our departure for the 1912 voyage, dropped the pilot with the January issue, and settled away, all hands will soon get shaken down into place and learn where the halyards lead.

The next thing we will take up is the

Big February Number

This issue will be the BOSTON SHOW NUMBER and will contain the earliest and most complete account of the first big motor boat show of the year. At this Show boat owners can see for the first time the 1912 designs in craft and engines, as well as all the new wrinkles in accessories that go to make life afloat safe and comfortable, and our story will be an analytical description of the various exhibits, showing the improvements that have been made in each product and describing the new articles that will be seen.

This number will be gotten up in very comprehensive form and will be of great value as a permanent reference guide to all boat and engine builders who exhibit at the Boston Show.

A Sword Fishing Story. There is one phase of the fishing industry of which but little is known by the layman, and yet which is most picturesque and hazardous. I mean the sword fishing trips which are made by Boston and south coast schooners off Cape Cod, Block Island and Nantucket. In *Bald Dutch and the Silly Fish*, Mr. Marcus Conlan contributes an unusually interesting fiction story where the scene is laid on the deck of one of these sword fishing schooners. It is a compelling story that carries the reader right along aboard of the little vessel.

Finding Your Position. The series on the practical handling of your craft, whether motor boat or sail boat, will continue in the February number with an article on *Bearings, and Their Value to Skippers*, by Commodore C. S. Stanworth, author of *Pilot Water Navigation*. The average amateur sailor usually pays but little attention to the exact position of his boat, as a rule blundering past shoals or reefs by giving them as wide a berth as he thinks necessary from the chart. If he once realized how simple and accurately his position could be found by merely taking a one or two-point bearing, this method would be in very much wider use. If you read this article you will realize how important the knowledge of this subject will be to you.

Concerning the Stability of Motor Boats. In an article on the *Stability of Motor Boats*, Mr. Lawrence Chapman tells in an interesting, practical way the elements that go to make for seaworthiness and staunchness in motor boats. Everyone has noticed the way some motor boats act in a seaway, and wondered what kept the poorly designed top-heavy craft from turning turtle; many of these being of home design, one realizes how little the important question of stability is understood. Read this article and find out for yourself how you can minimize the rolling qualities of your present boat and increase its stability.

Other Features. Mr. Rowland's story *To Baffin Land In A Motor Boat* will be continued in the February issue, and this installment will take the reader clear to Hudson's Strait. Then there will be a story of a 1,300 mile cruise in a windjammer from San Francisco to San Diego and return; a talk on the *Planking for the Motor Boat; The Month In Yachting*—a discussion of the month's event in the boating world—and a whole mess of new plans for the boat builder or buyer to study over.

Lessen Your Engine Troubles. In *Engine Troubles That Can Be Avoided*, we will have a practical article that will be of great value to motor boat users, both those new at the game and those who have run a gasolene motor for years. There are lots of little hints and quirks, the knowledge of which will prevent half the irritating engine failures, which always occur at the most inopportune time.

Write Us About Your Troubles. Don't forget to make use of our new Department called *Mess Room Talk* to help you solve any difficulties which you may run up against in handling your boat or engine outfit. If you want to change your ignition system, or if your engine is using up too much current, or the fuel consumption is not as economical as it should be, put your troubles up to us and see if our staff cannot help you. There are a whole lot of these problems that may not seem very large, yet the solving of which will make the season's boating much pleasanter. It does not cost you anything except a little labor and a two-cent stamp to tell us about them. We will be glad to help you out, and if the question and answer are of enough general interest we will publish it in this Department for the benefit of other YACHTING readers. In this way you may be helping out some other poor fellow who has been up against the same thing and has not found his way out.

Outing for January

While you are reading about what is going to happen, don't forget that the January OUTING has a number of first-class articles that will be bound to interest you, because you are interested in out-door sports.

Here are a few of the articles that will make a special appeal:

For the Traveler. Charles W. Furlong's *The Moroccan and His Land*, is a readable, fully illustrated survey of men and conditions in this interesting country, and J. Earl Clauson's trip *In Quest of the Newfoundland* is described and its result illustrated. The first voyage of Shackles, *Footloose and Free*, is amusingly related by Stephen Chalmers in real shipshape style.

Can You Afford An Automobile? The automobilist and his new-model fever has been remembered. *Types of Automobile Motors*, by Harold Whiting Slauson, and *What it Costs to Keep an Automobile*, by John Earl, are both discussed authoritatively and concisely, while *The Automobile Guest*, by Harvey W. Seymore, is a gentle satire on that hardest rider of all—the man who has never owned a car, but who "knows nice people, you know." *A Little Law for the Motorist* is also included.

Practical people will like *The Killing Power of Rifles*, by Horace Kephart; *The Useful Airedale*, by Williams Haynes, and *The Rising Reds*, by Arthur S. Wheeler (for poultry fanciers).

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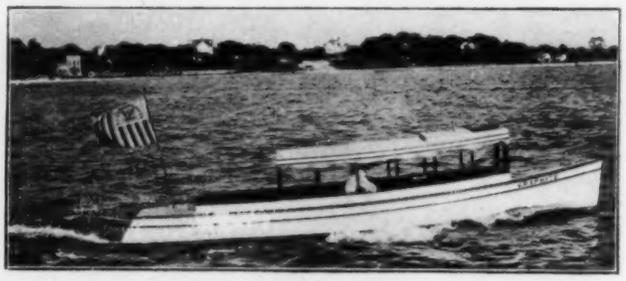
It Takes Hard—Continuous Daily Service—Under Trying Conditions to Prove the Reliability and *Real Qualities* of a Marine Motor



Here's a boat, the "Graphite," owned by Morton Rynearson, Customs officer at St. Andrews, Fla. Has been in continuous service since March—never causes any trouble, always ready to go when needed, equipped with 3 cylinder 36 H. P. Gray Model "T."

When it comes to durability and long life, here's a boat owned by Mr. W. J. T. Ivey, Port Dover, Ont., equipped with a 4 H. P. Gray purchased in 1906 (five years ago). Has been in continuous service and is today giving the best of satisfaction. Often takes trips of 60 miles and better—never has any engine trouble.

This little boat the "Midget," owned by A. L. Resch, Marietta, Pa., equipped with a 3 H. P. Gray purchased in 1908, is in continuous service every season from April to Nov. Has travelled over 10,200 miles. Engine has never given five minutes trouble.

This photo shows five barges on the Illinois & Mississippi Canal loaded with 875 tons of rock (equal to 25 freight cars), being towed by three 20-foot launches, each equipped with a 10 H. P. single cylinder Gray Motor. These engines are **real workers**—they make this daily trip of 11½ miles and return in eight to nine hours. Engines stand the heavy strain in fine shape.

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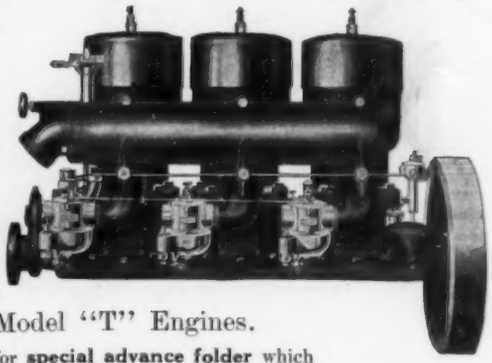

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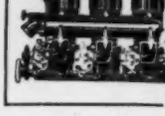

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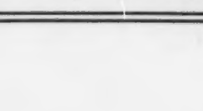

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HERBERT L. STONE, Editor.

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DISTURBER II "SHOWING OFF" IN CHICAGO HARBOR. THE PRINCIPLE OF THE "PLANE" AND ITS LIFTING POWER IS CLEARLY SHOWN IN THIS PHOTOGRAPH.

YACHTING

VOLUME XI NUMBER 1 January, 1912 25 Cents a Copy $2.00 a Year

"THE MIGHTY, ROCKY FACE OF A WILD, HIGH COAST."

To Baffin Land in a Motor Boat

A THOUSAND MILES ALONG THE EXPOSED LABRADOR IN A 35-FOOTER. THROUGH HUDSON'S STRAIT TO THE BAY WHERE THE GREAT NAVIGATOR LOST HIS LIFE. EXPLORING BAFFIN LAND.

PART I—THE START.

By J. T. ROWLAND.

"I HAVE sold the Daryl to the Hudson's Bay Company for use at a new post to be established this summer on Hudson's Straits. Do you want to undertake her delivery there for me?"

Such was the substance of a letter I received last spring from Dr. Grenfell of the Labrador Medical Mission. I remember it was a rainy, dull morning; one of those days on which even the college campus takes on a dingy appearance and our whole world seems very narrow and prosaic. But, as I re-read the Doctor's brief note—he does not waste words—there stole through my veins a stimulating fire not born of the sodden New Haven atmosphere. The staid old buildings and quiet elms vanished, and in their place I could see in prophetic vision the mighty, rocky face of a wild, high coast, with the spume from an easterly gale lashing its foot; and there, a scant half-mile off shore, just inside that stranded berg, is a tiny power boat, bucking and fighting her way northward, a few feet at a time—but, just the same, going north, always north—a patch of sail to steady her over the seas, and her decks clear of impedimenta.

Let her dive; she's as tight as a bottle! So long as the fellow steering keeps his toe-hold, it doesn't matter. Old Aegir can slush her down, if he likes; it will save us the trouble. Enough to wake one up, surely!

DARYL WAS A 35-FOOT TRUNK CABIN MOTOR BOAT WITH A SMALL AUXILIARY RIG.

"Thought you had an 8:30 this morning," says my room-mate inquisitively, as I rip the cover off our partnership typewriter, a few minutes later. "What's matter; unprepared?"

"Nope;—letter; goin' to the Arctic, Jeff." And I proceed to indict a reply to the Doctor, to the effect that I will take Daryl to Cape Columbia or the Pole, if he says the word—the same being mailed and on its way to London before my classmates in recitation have really begun to "dope out what the Prof. is trying to hand 'em, anyhow."

"A boy's exploring trip," was the sentence pronounced by a venerable friend of mine on the faculty when I told him of the proposed voyage. But I noted that there was a twinkle in his eye and a tone almost of envy in his voice, as he said it.

An exploring trip it proved—beyond my fondest expectations—since, by our cruise, it has come about that a 35-foot power boat can boast to have logged over 3,000 miles in one summer, upon one of the hardest coasts on earth, comprising the entire length of Labrador and of Hudson's Straits, from Cape Chidley west to Cape Wolstenholme, as well as two passages across Hudson's Straits, at a point of over one hundred miles' width, and the exploration on both the north and south sides of the Straits of many miles of coast, which appear upon the Admiralty chart as a vague and uncertain dotted line.

Whenever a ship accomplishes some rather unusual feat it arouses a natural interest on the part of sailormen—professional and amateur—to know the salient points of her construction and equipment which have contributed to the success thereof. For this reason I propose to preface the chronicle of our voyage with a brief description of Daryl and her motive power.

The photographs show Daryl as a generously-proportioned little ship of some 35 feet over all length, with virtually no overhangs. Her ample freeboard and high-crowned cabin-house have the effect of making an extremely roomy cruiser without giving the top-heavy appearance of the "raised deck" type which has recently become the fad in our waters. Daryl has, moreover, plenty of beam—9 feet 6 inches, or thereabouts—and her weights have been kept low, so that she is stiff enough to carry a light yawl rig. Still, she is not a sailing vessel—we learned that quite early in our voyage. A boat which is designed primarily for power cannot be expected to lug sail like a keel sloop. When it is really blowing, she is best under power alone, but in anything up to a 50-knot breeze, some sail helps her progress very decidedly.

THE CHIEF ENGINEER.

However, the chief drawback to her use, under sail, without the engine, is the fact that she was given one of those absurd little power boat rudders, cut out of a sheet of bronze and of about the size of a frying-pan. She has a healthy and proper tendency to luff under sail, and this miserable little plate, even when hard over, is not large enough to hold her off the wind, unless there is a stream of water from the propeller kicking against it. Give me a good, old-fashioned, Cape cat barn-door of a rudder, every time, to hang over a vessel's stern, for positive action!

Daryl rejoiced, likewise, in another modern fad—the pinched-in, sharp stern, filled up inside with oil tanks, apparently to reduce the buoyancy still further. She left the water very nicely, I must confess, but I am glad it never became necessary to run before a heavy, breaking sea. So long as one kept her nose to wind, I believe there is nothing she would not go through. The cockpit was shallow and self-bailing.

Our power-plant consisted of a 15-20 horsepower, 2-cylinder, kerosene engine, made by the Mietz & Weiss Company, of the heavy duty type used by the Baltic fishing vessels. At its highest efficiency it consumed a trifle over one gallon per hour, which would give us in moderate weather between five and six hundred miles' steaming on one filling of the tanks, the aggregate capacity of which was 110 gallons.

On the whole, the Daryl's type and power will prove, I believe, about as serviceable for severe use as any sort of power boat which can be made—subject to the criticisms given above. Personally, I prefer a sailing vessel with power as an auxiliary—but that is a different breed of fish.

July 8th saw the "Chief" and me landed at Harrington, on the north shore of the Gulf of St. Lawrence, some 60 miles east of Cape Whittle. The "Chief," Mr. Robert B. English, of Hartford, Connecticut,—Yale, 1908,—has, among other attainments, that of being an expert amateur mechanician. His experience with various breeds of automobile and motor boat engines, combined with a nature which gets profound amusement out of difficulty and hardship, had placed him in the first rank of aspirants for the dubious privilege of running a marine motor in sub-Arctic waters. His title was not a mere pleasantry, even if our ship was tiny. Its use on my part was always accompanied by a feeling of genuine respect—and also of thankfulness that he had the billet of engineer, and not I.

We were not much weighted down by baggage. Each had a canvas bag full of heavy clothing, boots, oilers, etc. In addition, the Chief carried a kit of special tools warranted to twist the tail off Old Nick himself; and I a chronometer, my sextant, tables and charts. The charts north of Belle Isle are remarkable chiefly as a work of fiction, but I had them,—all that could be secured,—though it was rarely that any two of the same region agreed.

Our first inspection of Daryl was not entirely a pleasure. She impressed me as having the makings of an excellent little sea boat, but the Chief was muttering like a July thunderstorm as he went over the engine: "Well, of all the ——— bunch of junk ———!" etc.

His next move was to send for the man who had been running the engine—a native of the coast, yclept Eli. From him certain interesting items were gleaned, as, for instance, that he had been using for fuel a petroleum-looking substance of about the consistency of fish oil, on account of which it became necessary to remove the cylinder-heads at the end of every day's run to wash out the gum from her in'ards. This involved the taking down of all the water circulation connections.

There was further information to match, but the Chief decided to apply to a higher and more intelligent authority. Accordingly, we interviewed the doctor in charge of the hospital, to ascertain in just what condition Daryl's engine was.

"Oh, the engine's all right," said he; "a Scotch engineer off the survey vessel came ashore and put her together for me last month."

"Have you run it yet this season?" queried the Chief.

"N-no, he wasn't able to make her start," quoth the Doctor, "but it will go all right; you'll have a bully trip"—or words to that effect.

Whereupon the Chief surveyed the top of a distant hill and smiled sweetly, while I tried to look politely bored.

"I fastened one of the crank bearings in place with a bit of fine wire," the good Doctor continued, with an air of professional

GOING UP THE STRAITS OF BELLE ISLE.

A TRAP SKIFF USED BY THE LABRADOR FISHERMEN.

BATTLE HARBOR, LABRADOR, FROM GRENFELL HOSPITAL.

pride that was belied by the humor contained in his assertion.

At any rate, there was no reason why I should not be going ahead with the rigging and get stores on board; so, while the Chief labored and held honeyed conversation with Eli of the engine, I enlisted the aid of a kindly fisherman and got busy on the less technical end.

As a Sunday intervened, we were not ready for sea until the 12th. One thing had occurred to make me rather indignant: I had gone to some trouble to have 200 gallons of high test oil and a new 40-fathom anchor chain shipped from Quebec by the little mail steamer which calls at Harrington once a month. On inquiring for these articles I was told that the steamer had called recently for the mail but was in too much of a hurry to land my freight, so had carried everything back to Quebec.

This sort of treatment on the part of transportation companies is so common in Newfoundland and on the Labrador, that it is taken by the inhabitants quite as a matter of course. I have heard, even, of cases in which supplies for a hospital had been carried down the coast for several trips, before the steamer's people could be prevailed upon to go to the trouble of landing them. Even the mails are handled in a slipshod manner.

The morning of July 12th was calm and foggy, with a big swell from the south'ard rolling in across the Gulf. I got down to the ship about 8:30, but discovered, while still some distance off, that the Chief was ahead of me. This was not from the noise of exhaust (as the motor ran very quietly) but from the cloud of gray-blue vapor which enveloped the wharf-end and the boat.

The Chief, grimy and perspiring, with a home-made cigarette stuck in one side of his mouth, greeted me at the cabin hatch—all smiles.

"Guess she'll run," he said in a tone of pleased surprise; "but I *hate* this rotten fuel oil. Let's try her!"

Everything being ready, in the way of stores and equipment, I had merely to make the dory painter fast, and cast off from the pier. Throwing in the clutch did not seem to have the slightest effect on the speed of the engine, and the reason was quite apparent from the ten-thousand-ton-steamer-fashion in which the Daryl gathered way.

Discovery No. 1.—Our propeller was absurdly undersized. (No, there was not any slip in the clutch.—Bob knew his job.)

At length our ship gathered the astonishing speed of about 4½ knots, her 15-20-H.P. engine buzzing like an overgrown sewing-machine, and we ambled sedately towards the harbor entrance. This was at 9:30 a.m.

It still looked thick outside so my intention had been to make the real start later in the day, but, at this juncture, the after-cylinder began to miss and finally cooled off and quit work altogether.

The Chief poked his head up.

"The old bunch of junk will keep going this way, I guess," he observed, inhaling a carbureted charge of tobacco plus fog, "but God knows whether I can start her again, if I stop her once."

Having observed the operation of cranking, I felt sympathetic.

"Well," I replied, "we can run a compass course for about one hundred miles, so the fog doesn't matter much. I'll keep her going for you, Bob."

Thus it happened that our trial spin became the real start, by which we saved time, as I learned afterward that it continued thick about the Mecatinas all day.

Once clear of the ledges, we laid a course for Point Amour in the Straits of Belle Isle, and appeared to be making about as good progress as with both cylinders working. Evidently one sufficed to turn the little spinner under her stern up to the engine's limit of revolutions per minute. On reference to the log, however, I find the following melancholy entry: "2 p.m. Fore cylinder also cools and engine dies. Devil of a time to start it again. Put torches on ignitor balls, but they sputter and go out. Chief's comments recorded elsewhere. Finally get her going."

In the afternoon the fog lifted for a couple of hours and showed us an island-girt, barren coast, made up mostly of red trap rock, granites, and gneisses. The only advantage of the absence of soil in this part of the world is that its geological record can be read by one who runs,—which, fortunately, applied to us, just then.

DR. GRENFELL (IN CENTER) AND SOME OF HIS STAFF AT BATTLE HARBOR.

It is interesting that the natives on the Quebec Labrador speak of a rapid shoaling of their harbors within their own lifetimes. Raised beaches are observable here and there, though not at so great an altitude as in Northern Labrador. The land is evidently undergoing quite a speedy uplift, which appears to involve the entire Labrador peninsula.

Thick weather came back with the darkness. Next morning our landfall proved so good that we ran in among the breakers off Grassy Point, but spun

the Daryl around, after identifying the spot, and passed Point Amour, still in the fog, shortly after.

About noon it breezed from the S. W. and made up quite an ugly chop. Going aloft I was able to see over the fog the topmasts of a cluster of schooners anchored behind West St. Modeste Island; so we called it a day's run and hooked her up among them, having come some 120 miles from Harrington.

Later in the day it blew quite hard and the fog came in so thick that it rolled up through the "tickle" where we were all anchored. As this word will be cropping up continually, I may say that a "tickle" is the diminutive of strait. They are apt to be ticklish places—hence the derivation (?).

Next morning we started out to cross the Straits *en route* for the Mission headquarters at St. Anthony, New Foundland where I hoped to be able to fit out the Daryl in really proper shape for her long voyage and to pick up George Ford, whom Dr. Grenfell had designated as a reliable pilot for the northern part of the coast. It was still thick and blowing quite a breeze, but by sail and power we made good speed although the tide-rips and eddies in this narrow part of the Straits of Belle Isle make a small boat do some queer gymnastics.

It required one man continually to nurse the motor, and one, of course, at the wheel, so that we were both pretty much on the job. I argued, however, that the present risk was slight in comparison with ones no doubt in store farther north, so that it would be a waste of time to be especially cautious.

As the Chief agreed, we "let her have it," and made a fine 5-hour run to Cape Norman, after passing which, we ran into smooth water and out of the fog.

Let me say here that the Strait of Belle Isle is, without exception, the meanest place for fog which exists on earth, for the reason that anything but a due south or due north wind brings it in, and even those winds will pile up a stream of fog along the lee shore. If the wind is between northeast and southeast, one gets fog from the Atlantic; if northwest to southwest, from the Gulf of St. Lawrence. And if there is no wind at all, the fog rises right up from the water of the Strait itself.

About 15 miles east of Cape Norman is Cape Bauld, the northeast promontory of Newfoundland. Between the two lies Pistolet Bay, best described by the accompanying chart. The land on the Cape Norman side is rather low and the water somewhat shoal, the geological structure being that of horizontally bedded strata, whose cross-section, as exposed on the sea cliffs, suggests a huge layer-cake by its table-like regularity. But the east shore of the Bay is formed of massive volcanics, and has the ragged, high contour, typical of the Labrador.

A number of good-sized bergs had grounded in different portions of Pistolet Bay, making us feel that we were at last on the threshold of the North, despite the fact that out latitude was somewhat lower than that of Liverpool.

Cape Bauld stands on an island a few miles in length, which Kirpon (pronounced Carpoon) Run cuts off from Newfoundland, and as this offers to vessels bound from the Strait around to the Atlantic coast of Newfoundland a short cut of a few miles and an escape from the tide-rips off Cape Bauld, it is much used by the fishermen in spite of its narrowness and tortuous shape.

We picked our way through with the aid of a man off a fishing schooner. It seemed incredible that a vessel of any size could be swung quickly enough to make some of the turns, but there is nothing in which the Newfoundland skipper takes greater pride than in working his vessel through the intricate island runs and tickles of his uncharted fishing-grounds. Piloting a schooner-yacht in among the Thimbles is tame by comparison.

I paid off our pilot in tinned milk and preserved fruit, which pleased him (and, no doubt, his shipmates) more than money, and we dropped him astern in his trap skiff to pull back to his vessel, while we hauled south for a 20-mile run along the Atlantic coast of Newfoundland to St. Anthony.

The wind had now left us completely and it was a glorious, clear evening—the ragged coast-line a couple of miles distant silhouetted against the golden afterglow in the west.

Bob was able at last to leave his post below long enough to relieve the wheel, while I rustled up some grub and a hot mug-up of cocoa—coffee and tea both being on my blacklist, for this sort of work, in which one needs not so much stimulant as nourishment. We ate like a couple of sledge dogs.

As night came on it became evident that our progress past

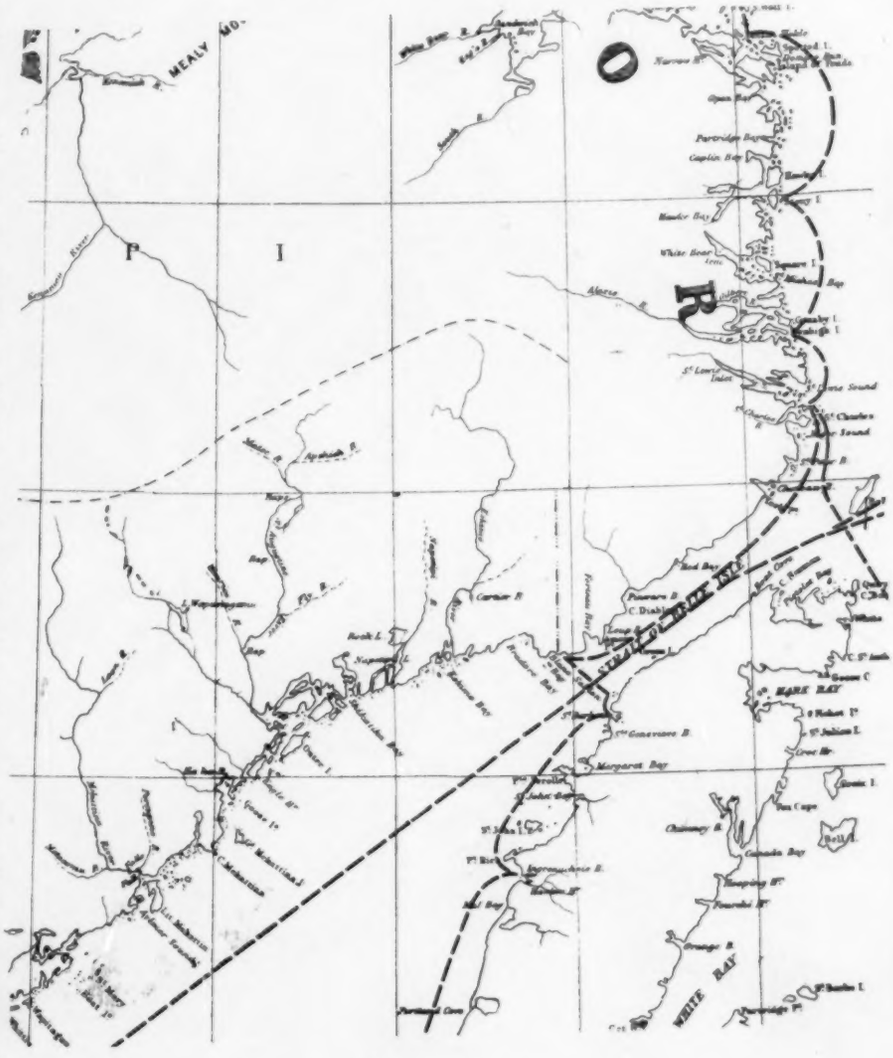


CHART OF STRAITS OF BELLE ISLE AND THE LOWER LABRADOR.

the land was extremely slow. We were not quite setting the water on fire, either, as one of the cylinders had cooled off again while running slow through Kirpon Tickle. But worse yet, a trawl buoy showed us that there was a strong current setting north, which is a reversal of the usual condition on the coast. I have since learned that it is not uncommon for the Polar current, which runs strongest in spring and fall, to be reversed in this manner *on the surface* for a couple of weeks during the summer. That the northward flow *is* only a surface phenomenon is proved by the fact that the large bergs still continue to work south.

We finally limped into the harbor of St. Anthony about midnight, 15 hours out from St. Modeste, having taken half an hour for the last mile-and-a-half. The run from Kirpon to St. Anthony had been a very trying one to the Chief, whose mildest plaything on shore is a 90-H. P. Fiat racer, and I must confess that I did not greatly relish the idea of going to the Arctic in a motor boat which could not buck a 3-knot current in smooth water.

"Why, it's absurd that this great bunch of junk shouldn't shove her along at least six knots!" exclaimed the Chief disgustedly. "If I had her in civilization near a machine shop for a couple of days I'd play a joke on the damned old lawn-mower! She might cheer up if we gave her a drink of some real oil instead of this stinkin' gurry," he added reflectively.

"The Doctor has a sort of machine shop here," I said, "so you can take your time and tune her up, while I get some decent gear and grub on board."

St. Anthony has a splendid landlocked harbor, so we were able to turn in and sleep peacefully. The welcome voice of Doctor Little, resident surgeon at the St. Anthony Hospital, waked us up next morning.

"Glad I've got boots on," he sang out, wading through the mixture of engine oil and bilge water to our bunks. "Howdy, boys! what's the matter with the old girl? She seems rather weepy."

"Just a leak in the stuffing-box," yawned the Chief, coming to. "I'll get after it today. Eli didn't know how to pack it, so he built a wooden box around it and caulked that. Fine bunch of junk!"

We towed Daryl up to the hospital wharf and let her sit on the mud at high tide. A couple of hours later I came down and saw the Chief sitting on the string piece, regarding something under Daryl's stern with mournful amusement.

"Look!" he said simply.

All the way from Harrington we had remarked that there seemed to be an undue vibration in the tail shaft. Now we saw the cause. The stern-bearing of the shaft had come away from the dead-wood entirely and had evidently been spinning around with the wheel while the shaft gyrated in a hole of twice its diameter in the dead-wood.

"The worst of it is, that the bolts are broken off sheer with the wood, but I guess I can drill 'em out, if I can get at it. We will have to get her higher, though," said Bob. "I'm damned if I work up to my neck in ice water!"

As the next high tide came along in the middle of the night when it would not be possible to get men to lend a hand, we had perforce to postpone further operations until Monday.

Sunday afternoon brought me quite a surprise, however. The homeward-bound mail steamer, coming up from the North, called in and had just got off to sea again when Dr. Little sent down aboard for me.

"I have just heard from Battle Harbor," said he. "They have received a Marconi there from Dr. Grenfell, on board the westward-bound Montreal liner Corsican, asking to have a boat stand by to take him off in the Straits, and so save him the time that it would take to go 'way up to Montreal and back again. She is due off Point Amour Tuesday morning. Do you want to go after him?"

THE RAGGED ISLANDS, A TYPICAL LABRADOR HARBOR. NOTE SCHOONER IN COVE IN CENTER.

"WE BLUNDERED THROUGH A TICKLE IN THE FOG AND FOUND IT CLEAR ON THE OTHER SIDE."

Of course, I did. It was just a case of ability to get ready in time; but I had a consulation with the Chief and we decided it was a possible thing. Accordingly we got to work early Monday morning and were ready for sea by midnight.

Dr. Little placed the machine shop and all the men on the post at our disposal, so that, instead of a week, as I had anticipated, we were only a matter of hours in getting fitted out. The greatest hardship naturally fell upon the Chief, but he certainly played his joke on the motor, for we slipped out to sea through the cold fog at daylight to the merry tune of six-and-a-half knots.

Among other changes he had replaced the diminutive two-bladed propeller which Daryl had carried away from Boston, with a three-blader of larger diameter, which got a real hold of the water, instead of just churning it up a little under the stern.

Our ship's company was now increased by two—George Ford, a native of the Labrador, of English descent, who had been for years in the service of the Hudson's Bay Company, and had the reputation of knowing the northern part of the coast better than any other man living (a very valuable reputation in a section of the world where charts are comic supplements), and Dawson Howell, of Hartford, Conn., who had come to St. Anthony in quest of adventure and roughness and was about to get a liberal dose

(Continued on page 64)

JAKE'S MOTOR BOAT

By Warren H. Miller

THE ARM CHAIR FLEET OF THE POHANK YACHT CLUB ACQUIRES A PERFUME BOAT, AND THE SKIPPER IS FORCED TO TAKE CHARGE.

THE Skipper brought his chair down with a bang from its usual tipped-up position against the lee wall of the Pohank Yacht Club, for a motor boat in a terribly run-down state of health was limping towards the float. There was nothing unusual in this circumstance; but the thing that made him jump to his feet and stare seaward was that the boat appeared to contain Bill and Jake, as captain and engineer respectively, and this after a week's unexplained absence from the regular sessions of the Arm Chair Fleet.

Now, if Bill owned it, it was undoubtedly stolen, and if it was Jake's it was obtained under false pretences, so the Skipper mentally wished the former owner joy of her as he strolled down to meet the distinguished arrivals.

On she came, coughing and dropping a stitch at irregular intervals, the dirge being enlivened now and then by a rousing backfire. Jake and Bill were plainly nervous, but calm, with a French calmness, an enforced *sang froid,* as they endeavored to make the float in a seamanlike manner.

"Stand by!" roared Bill, glancing back hurriedly over his shoulder.

"Aye, aye, sir!" shouted Jake, hoarsely, dipping a bucket of sea water over the side and taking position by the engine.

"Wa-ay——*'nuff!!*"

Jake dashed the pail of water over the engine, whereat it stopped as if shot, while the launch swung neatly alongside the float under Bill's skillful twirling of an infinitesimal brass wheel. Bill stepped briskly out and moored her to the float cleats while Jake set industriously to work squirting water all over the engine with a small brass bilge-pump. They were evidently proud of having impressed such proficiency upon the Skipper, and were entirely unabashed under his cold, critical gaze.

"Whose boat?" that worthy ventured to inquire.

"Mine!" answered both in a breath.

"Humph!—How long have you squash-planters owned her?"

"More'n a week," retorted Jake, " 'n' I guess we know more about carburetting the thingumdingus than a certain poor guy I know of who never ran any more machinery than a yacht club arm chair,—what?"

"Is that the way you usually stop her?" continued the little man, unmoved, "because, if so, it must be something of an event when she starts again."

"Sure; dummy—that's the way you *always* stop them; the man at the gasolene station put us wise to that trick,—that is, he said if we didn't do something like that pretty sudden she'd get her nose under the string piece of his dock and drown herself with the rising tide," exclaimed Bill.

"He was sure quick at spotting a pair of walrus-necks," commented the Skipper. "And does she *always* run with that three-legged gait—that cross between a cuckoo clock and a one-lunged motor cycle?"

"Say," vociferated Jake," are you talking about the engine of this yacht—"

"No, I'm talking about that asthmatic sausage-mill-and-ice-cream-freezer that kicks along the crate which you and Bill are trying to drown yourselves in for the nonce."

"Toot-toot!—Blow your whistle,—you never saw the fish!" scoffed Bill, "Come on out for a spin."

"Yes,—come on in, the water's fine;—*nix!*" dissented the Skipper. "If either of you knew the rudimentary mechanics underlying the operation of a wheelbarrow, I might chance it," he snorted, "who runs the stamp-mill anyway?"

"Me," asserted Jake, blatantly, "I'm the pazzazza who taught this mule all it knows about the job of turning a propeller."

The Skipper withered him. *"You!*—Say, I don't know the carburetor from the spark-gap, but I'm a whole university course on the gas engine compared to you. However d' you manage to pull it on a gas engine,—what does she do, run herself?"

"Certainly not," retorted Jake warmly, "nor will she run for every genius-and-damphool-combined who hangs an anchor on her timer lever."

"If you'll tell me why you gave her a bath with the bilge pump just now, I'll go aboard," said the skipper, stepping gingerly into the boat.

"After you get to *know* something about an engine you won't have to ask such questions," quoth Jake, with kindly superiority. "We usually start the beginner right, however, by explaining that it's essential to start the engine *cold.*—The book says it always starts so."

"Oh," remarked the Skipper innocently. "Well, proceed with the funeral—start the hearse—*do* something; I didn't come here to sit all day and look at a crack in the dock," he went on impatiently, settling himself back in the stern-sheet cushions. Jake set to work industriously swabbing the engine with handfuls of clean waste; next he unscrewed all the spark-plug connections; then he pulled up the floor oilcloth and fanned the engine violently with it.

"How is she?" muttered Bill hoarsely from the wheel.

"Too hot yet," gasped Jake, fanning vigorously, "may have to turn the bilge-pump on her again."

"Is *that* the way you start a motor boat?" inquired the Skipper scornfully from the stern-sheets. "I thought you used a crank."

Jake looked up sarcastically from screwing up the electric connections. "A crank;—what's that?" he snorted.

"Why a crank, son, may be defined as a sort of animated goatee, pendant from the chin of an automobile. You pull it and it starts a riot inside. I thought they had 'em on motor boats."

"Did hev," put in Bill, "but she barked Jake's knuckles agin the floor planks so he hove her overboard."

"Look'y here, you supercargo," remonstrated Jake, "we have our own way of starting this boat. You watch us and *learn* somethin'."

He grasped the flywheel firmly by the rim, braced himself and gave a mighty heave. No result. Again the brace and the heave. Nothing doing. Jake wiped the perspiration from his face and grinned reassuringly at Bill, who regarded him anxiously over his shoulder.

"Psst!—Forgot somethin'," he exclaimed suddenly, evident immensely relieved at the discovery.

"Yes; you forgot to hang the monkey-wrench on the carburetor and blow the foghorn into the battery box," advised the Skipper ironically, "it'll do a lot of good. Say, d'you grocery-store salts think I'm going to sit here all day like a stone dodo? Get busy. Start something."

"WA-AY——'NUFF!!"

But Jake was not to be nonplussed. He got out an oilskin slicker and tied it firmly over the engine, poured a funnel of sea water on the feed pump, twiddled the carburetor float and again grabbed the flywheel. The engine sneezed and fired vigorously back through the carburetor, which encouraged Jake to redoubled efforts, and it was finally coaxed, urged and excited into a regular *go-pup, go-pup, go-pup,* that bid fair to continue indefinitely barring an irregular miss now and then.

"There! If you ever want to know how to start a motor boat, watch me!" exclaimed Jake triumphantly, "can you beat it?"

"I never saw its equal!" ejaculated the Skipper truthfully. "It's a prize way to dress a baby,—why don't you feed it a bottle of gasolene. Say," he broke off, "is this a dock trial or do you dry-goods-counter sailors always start her tied up to the float?"

Bill, covered with confusion, hurriedly cast her loose, and after several attempts to butt her nose into the float and take a dive under the gang plank she got away, winging a couple of anchored cats *en passant*. The engine was one of the sort which seems to carry a whole machine shop of small moving parts on its back, and Jake stood guard over it with the oil can, squirting about once a minute everything that dared to move. Occasionally she would stop and start to go the other way, but the faithful scrutineer was always on hand to persuade her otherwise.

"Now, if you agricultural tars would be kind enough to give a poor ignorant hypothenuse like me a few pointers on the habits and life story of Maud there," quoth the Skipper, unshipping his feet off the coaming and folding them inboard, "I may arrive at some estimate as to whether I am ever going to get back or not."

Jake shook his head. "It takes real intellect to run a motor boat," said he discouragingly.

"Well, wise me," pursued the Skipper impatiently "What's yon dingbat that you oil every time it wiggles?"

"That's the feed pump eccentric," explained Jake elaborately, "invented by Archimedes, you know, 6000 years before Noah; any school-boy knows that much. But—what's the use—only a mechanical engineer like me can understand these matters and I haven't time to explain them."

"Yes, but what's she good for;—what's that dingus that she weewaws, I mean, and why do you oil it all the time?"

"Oil, you know," continued Jake with elaborate sarcasm, "is made of,—of olefactory products, and, as your infant mind may have gathered from studies of the domestic sewing machine, is useful to allay friction on metallic surfaces. The piece of mechanism to which you refer as being weewawed, or as we engineers term it, osculated, is the,—er,—ah,—the feed pump which,—er,—feeds the engine, you see."

"Son, you're a great man," averred the Skipper enthusiastically, "I do perceive that you have dined heavily upon a gasolene instruction book;—far be it from me to jab an irreverent probe through the windblown bubble of your erudition, though." He tested the switch plug surreptitiously as he spoke. It was a makeshift cotter pin in place of a proper tapered brass plug, and the moment he pushed it a trifle off plumb the engine promptly missed. Satisfied with this investigation he straightened it under his thumb before the engine could stop, while Bill and Jake recovered simultaneously from temporary attacks of heart failure.

"Hey, you office-stool mariners," called the Skipper from his cushions, "I'm athirst for more dope about Maud. How does she work, and why does she work at all?—Instruct me, mates, or put me ashore;—I hate to be ignorant amongst all this talent."

"You tell him, Bill," shrugged Jake, "I'm so full of this subject I just couldn't help slipping the poor boob a few now and then."

"Well it's this way, young feller," explained Bill, condescendingly, "Th' ingyne gits her charge of,—er—of thermodynamics, you understand,—which is mostly gasiline,—through that 'ere carbyretter, you understand. Th' eelictricity comes in through

them spark plugs; and when them two gits together there's somethin' *doin'*, ain't there, Jake?"

"Yessir, that's what makes her go. Just keep these fundamental principles in mind and you'll have no trouble running any old motor. No matter what the trouble is, just refer it back to the elementary thermodynamics and the electric phenomena—"

"Elem-pheum-Hully Mike!—jes' say dem nice greasy words over agin' will yer?" ejaculated the Skipper. "Well, of *all* the damphool explanations—er—thanks for your infernally lucid description of the motive power of Maud,—I feel better now—" he broke off, noting that they were already well down the bay towards Sandy Point with a wicked tide rushing out to sea. The Mary Gee,—felicitous name—was making good time, albeit dropping a stitch now and then, and she was more than helped along by the eager tide. Presently they felt the ground swell of the open ocean, and the long, flat nose of Sandy Point was well abeam. And then the Skipper let his hand drop over the switch and quietly pressed it out of plumb under his palm. * * * *.

The engine stopped like an automatic music-box when your nickel's worth is up, and adjourned *sine die*.

"Whoa, there, E m m a!" shouted Jake, looking her over with a troubled grin. "It's nothing serious, gentlemen,—Maud is just sampling a thistle;—we'll be going again in a minute."

He cranked a dozen times, p r o f u s e l y and energetically without drawing the faintest whisk from the motor. Then he went rapidly over the gasolene valves, glanced at the switch, threw it over onto the other set of batteries, and went back and cranked some more.

The Skipper gave a sniff of disdain as he lit a long black cheroot, but he offered no comment, while Bill looked anxiously over the side, nervously watching the tide.

"Jest a minute, gentlemen," called Jake reassuringly. He regarded the carburetor suspiciously and finally advanced on it with the evident intent of starting something. The Skipper blew a scornful puff at him.

"Say;—I do love to see a real expert work," he exclaimed encouragingly, "so many of 'em don't you know;—but they get the money just the same. I watched one of 'em fix a Dutch sausage mill once; he hadn't Jake's intellect but he knew more about his subject."

The Mary Gee drifted helplessly, wallowing in the troughs of the seas amid a silence so dark brown that you could taste it.

"Say," taunted the Skipper at the perspiring Jake, "you wouldn't mind tooting your factory whistle, would you? The lighthouse keeper over yonder's a trifle deaf, you know, and he hasn't heard a robin this summer."

Jake looked unutterable exasperation, but it was the Skipper's innings, so he moved desperately on the carburetor, turned its spray needle valve a turn or two open, and then a turn or two shut again, as near as he could judge.

"F' Gawd's sake, Jake, git that 'ere mewl a-goin' agin 'r we'll drift clean t' Eurryp," implored Bill, trying in vain to keep her head to the seas.

"Ladies an' Gentlemen," megaphoned the Skipper, "thirty-one hundred mi-les to the No'th East of us, you will perceive the chalk cliffs of Merrie England; thirty-six hund-red mi-les in a di-rect line as we travel, lies the free city of Ham-burg, Germany; thirty-three hund-red—"

"Aw, flag it!" roared Bill malevolently, "Here, Jake, for the Lord's sake let *me* git hold of that balkin' mewl of your'n;—I'll show ye!" He pushed Jake aside and whirled the flywheel over so violently that it made two complete revolutions and nearly a third. Again he whirled it, accompanying each effort with a more vigorous expletive. It gave the Skipper an idea and his hand stole quietly over the switch again.

"Con-*sarn* ye! *Will* ye git agoin' or not?" growled Bill disgustedly, turning away to the steering seat as he yanked the flywheel in a last desperate whirl that spun it over and over leaving it rocking to and fro from the momentum.

"CONSARN YE—WILL YE GIT AGOIN' OR NOT."

The Skipper caught it on the timer, i m p e r c e p t i b l y straightening up the plug. There was a sudden snort and a wild burst of speed as the engine raced under her wide-open throttle.

"Well! I'll be blowed," gasped Jake, "th' dum thing started herself;—that is,—er,—I mean, you see, I had no trouble starting her after all. It's just a simple matter of getting down to brass tacks and finding what's wrong, that's all. Now we marine engineers—"The engine missed two straight. Jake collapsed and grinned sheepishly. "Well, I'll be—" he wheezed, glancing at the imperturbable little skipper. "But that was only a temporary,—er,—she always does that way;—I mean—" he again halted as the engine missed three straight. "Gosh!—I believe it's alive," he ejaculated.

"She sure stops every time you tell one," corroborated Bill, looking awedly at the obstinate little piece of machinery.

"Sort of miraculous liar's cure," grunted the Skipper, grinning quizzically at him. "Home, James," he ordered, turning to Bill, "I'm sick of watching this bunch of seafaring cash-boys showing off all they never learned about a motor boat. And, Jake, you keep your head shut;—we can't afford to have you making any more cracks."

"I never knowingly prevaricated in my *life*," declared Jake belligerantly. The engine stopped dead. So did Jake. He pretty nearly got down and prayed to it. His eyes stared out of his head as he stepped gingerly around it.

"Now you've done it!" grinned the Skipper, "and we poor castaways three miles out to sea. You ought to 'a had more regard for its feelings, Jake."

"Aw;—billiards!" roared Jake angrily, "*I* know what's wrong with it;—it's that d-n carburetor!" he gritted, opening it viciously several whole turns.

"Go as far as you like," muttered the Skipper, setting the

plug straight under his hand again. Jake whirled the flywheel and off she started full speed, while Bill yanked her about on her heel, heading her for Sandy Point Light, now well down on the horizon. She didn't get far. Already the exhaust was showing clouds of yellow smoke, tinged with black, under the wide-opened spray nozzle. The Skipper grinned sardonically as she began the sudden slowing down, characteristic of a flooded engine.

"Wotinell's the matter now?" groaned Bill over his shoulder, with a longing glance at the distant land.

"She's a leetle het up; and maybe her bearin's is froze," vouchsafed Jake judgmatically, after a short examination, "We'll hev to take her apart."

The Skipper grunted scornfully, curled himself up on the stern sheets and pretended to go to sleep.

Bill and Jake set to work over the mill. They unscrewed all the pieces they dared to, wiped them carefully with gasolene and set them all out over the oilcloth floor, Bill keeping diligent tally on a piece of board. They had nearly fifty dinky little parts about before their courage ran out and there was nothing important left in sight which had not been unscrewed.

"Guess she's all right now, eh, Jake?" enquired Bill anxiously, "Hedn't we better begin putting somethin' back?"

"She'll go now, believe me," declared Jake reassuringly. "Besides we haven't touched anything that really counts," he whispered. They carefully put back every nut, bolt and lever; Bill religiously checking them off the slate one by one with painstaking accuracy.

"Tally O. K.?" queried Jake, as the last piece went on.

"Tally O. K." echoed Bill, checking it off.

"There!" sighed Jake with a huge breath of relief as the last nut was screwed home. "Here's hopin' she'll—"

"Hold on!" yelled Bill electrically, "here's somethin' we left out!" He pulled a black, greasy, spiral spring, at least fourteen inches long, out of the bilge and wiggled it accusingly at Jake.

"This warn't in the boat when we started out 'n its sure here *now*. It come out'n thet dumb ingine somewhere 'n its got to go back *somehow*," he groaned, handing it despairingly to Jake.

Jake looked at it with it sickly grin. "I'm dadbusted if there's a place for it on her *anywhere*. Let's start up without her."

"No use," groaned Bill. "Dum this ignoramus business anyhow, Jake. Why don't ye know somethin,' 'stid of trying to bluff a gasolene motor?"

Jake acquiesced humbly, and, as a forlorn hope, hung the spring on the spark plug and turned over the motor. The engine was as dead as a tariff reduction bill in Washington. Nothing doing without that spring, back, and in its proper place.

* * * * *

AND ABOUT THEN the Skipper unfurled himself and sat up and took notice. "The tide has yet three hours to run," he observed briskly, snapping his watch shut. "How are you cabbage-patch fo'cs'le hands fixed for a sea voyage? Compass? None? You potato-diggers of the starboard watch never heard of one presumably. Got a water cask? Of *course* not—there was a spring on every farm you ever navigated. Chart? You'll need one pretty soon as we can only just see Sandy Point Light now. The only chart you ever saw was the one they catch suburban trains by. Any sea-anchor? There's a neat sea on now,—and rising. I suppose you used a harrow when the embattled cow needed a drag to windward—"

"Here;—TAKE it, and do your damndest!" shrieked Bill hurling the greasy spring at him. "You're captain, you're mate, you're engineer of this craft, and you can go to hell with her! All the anchor we got is out, and it ain't near bottom either," he wailed. "Jake and me's all in. We're goin' to curl up and go to sleep till we fetches up somewhere, if it's only a mile this side of Eurryp."

They collapsed in a heap in the bow sheets, leaving the Skipper to his own devices. He glanced at the spring, concluded that it must form the tension on the inlet valve, and presently he found a long port drilled down the cylinder-casting into which the spring fitted exactly. Next he readjusted the carburetor spray needle, cleared the cylinders, and gave the flywheel a turn. There was a businesslike cough, and the next attempt started her off as sweet as a lamb. Bill and Jake rolled upright like two sacks of wool and stared at him, fascinated, stupefied.

"How *does* he do it,—without a makeup!" ejaculated Jake rubbing his eyes.

"You can *tell* he's a perfect *gen*tleman by the way he chews his quid," gurgled Bill delightedly behind his hand. They burbled at him, lost in admiration, and then started to sing a maudlin duet about being afraid to go home in the dark.

"Turn to, you rural deckhands,—I'm captain here," snapped the Skipper. "Bill, you clean and light the running lights; and as for you, you wind-blown bacon-rind of misinformation,"—glaring at Jake,—"you go out astern and sit on the rudder till I want you. I'll tend the engine and the wheel, thank you, as it's dark and I want to get home to supper *some*time."

They chugged steadily in from the ocean until they began to pick up the harbor buoys.

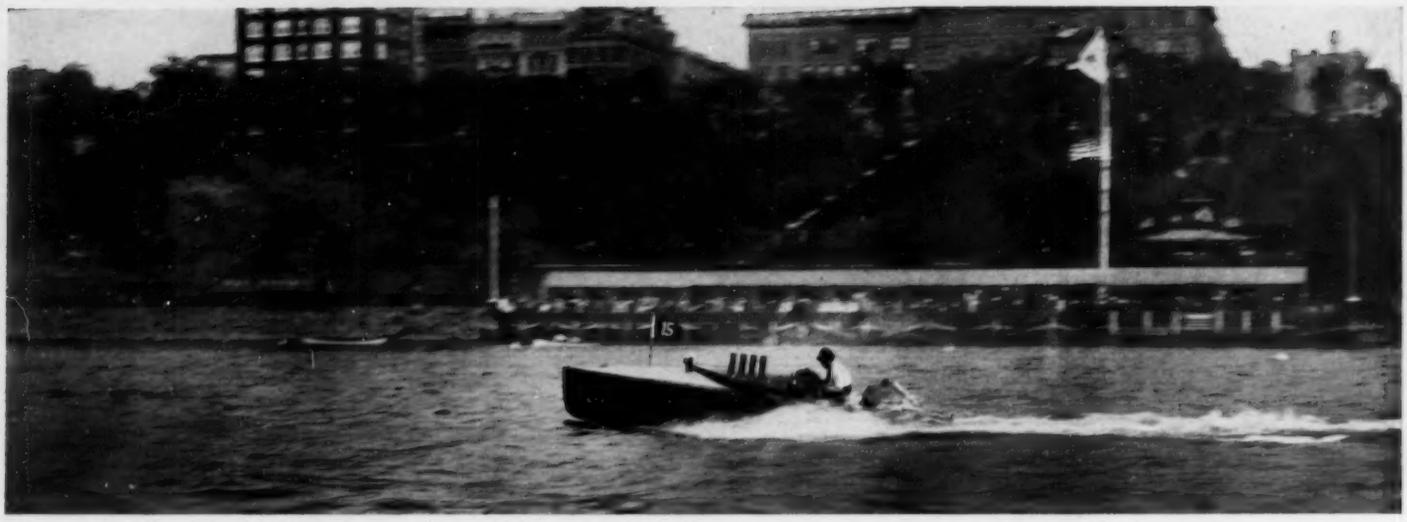
"Yes,—but officer,—" begged Jake humbly from his perch on the rudder, "wherever did you learn anything about a motor boat? Wise us. We never knew it was in you."

The little Skipper threw out his chest proudly. "I was once," he observed, "skipper of the late Gloriola, which towards the end of her illustrious career, became an auxiliary. Pipe that?"

"Son, you're a pip!" roared Bill. "And so you were monkeying with our switch all the time Jake thought the engine possessed, were you?" he inquired, narrowly, as certain suspicions cleared up in his mind.

"They never come back. This bet takes in Jake," retorted the Skipper guardedly.

Bill and Jake exchanged glances, but nothing further was said until the Mary Gee was home and moored in her berth. Then, when they passed the sandy beach of the yacht club walking home, revenge came sweet to their aching hearts, for they rolled him—Lord, how they rolled him!



TINY TAD, AN 18-FOOT SPEED BOAT OF A SIZE THAT WOULD MAKE A GOOD SMALL RESTRICTED CLASS.

The Month in Yachting

IF the disposition of the protest by the committee in charge of the Manhasset Bay Challenge Cup Series which resulted in the disqualification of the new Class P boats which were built this year does nothing else, it will at least effectively prevent the building of new racing boats for next year. No one is going to build to the top of the class, where he would have to rate under the rule, while there is a chance of his being disqualified through the failure of his boat to measure in under the possible ruling of some committee; and until this clause in the rules is cleared up yachtsmen will not risk spending money on new boats—there are too many other places they could put it. The only boat that we know of which will be built this year, and the order for this was placed before the decision in the above named protest was made, is a new Class M sloop for Mr. H. G. S. Noble of the New York Yacht Club. This boat is being designed by William Gardner and will be built at Wood's Yard, City Island. It is said that the rig of the new boat will be similar to that of Dorello, with whose tall, knockabout rig all Eastern yachtsmen are familiar. It was thought at one time that Mr. George F. Baker, Jr., would also build in this class, which would have insured good racing, but this now seems improbable, and around Long Island Sound waters Mr. Noble will not find many boats of recent vintage to give him a scrap. Mr. Noble is the owner of the Gardner sloop Irondequoit, which has raced consistently in the M Class for a number of years.

Speaking about Long Island Sound reminds me that the Larchmont Yacht Club will again be headed by Commodore Leonard Richards, who was re-elected at the recent annual meeting of that organization. This is a good thing for the Larchmont Yacht Club, as the organization has flourished under his leadership during the past year, and the Treasurer has announced for the first time in a number of years, that there was no deficit to meet. George M. Pynchon was made Vice-Commodore, and Francis M. Wilson, Rear-Commodore. The racing season of the Larchmonters was one of the most successful in its history, under the leadership of Horace E. Boucher, who, it will be remembered, came from the Atlantic Yacht Club to take the position. It is gratifying to those who raced at the events held by the Club during the season that the prizes that they won have already been distributed. At the regular regattas of the club this summer a total of 1,051 yachts started, the largest number in any one race being 138, a record for the Club and for Long Island Sound.

Anent the remarks in this column last month in regard to the rating rules of the American Power Boat Association in their relation to hydroplanes, I am in receipt of a letter from Commodore E. S. Osborn, head of the National Power Boat Association in which he takes a " shy" at rating rules in general. His letter says in part:

> It isn't what the Mosquito will do to the American Power Boat Ass'n rating rule or any other association's rating rule; it is what the rating rule will do to the development of fast boats. Any rating rule in power speed boats is an absurdity. A rule that will allow a 25-mile boat to go out and win a race from boats making 30 miles can do nothing else but kill the development of fast boats and take all the pleasure from the sport, both from the owner's and spectator's standpoint; and as long as clubs persist in running races with rating handicaps, just so long do they hold back the development of the sport. The Western Power Boat Ass'n three years ago adopted four classes of boats, *i. e.*, 20′, 26′, 32′ and 40′ over all length. Over all is the only restriction placed on these classes. Under the above rules we have seen our craft developed from 20-25 mile boats to 30-40 mile boats. Why? Because a man knows if he builds the fastest boat he can win. He knows if he builds the fastest boat he will not lose to some slower boat by a fool rating handicap. Therefore, he is encouraged to get out and build fast boats.

There is a good deal in what the Commodore says in regard to this matter, insomuch as it relates to championship events for speed boats in a community which can supply enough fast boats to fill the various classes. On the other hand I cannot think that this rule alone would be a good thing for the development of the sport in any other than a purely championship racing class. Throughout the country there are many owners who like to race who belong to clubs or associations where the wide diversity in type and size of the boats makes it necessary for a rather hetero-

JUDY V, A 1911 CRUISER THAT HAS MANY FEATURES TO COMMEND HER.

geneous collection to face the starter in many events. This is particularly so in cruising or long-distance races, where the definition of what constitutes a cruising boat is so wide and the possibilities of unlimited power are so great that some kind of a rule equalizing the chances of the boats is a necessity. For instance, in a 40-foot cruiser class a boat might qualify as a cruiser as regards cabin, sealed cockpit, living accommodations, etc., yet have light displacement and excessive power, so that an out-and-out cruising boat capable of a normal cruising speed would have no show against her. Under these conditions some kind of a rule penalizing excessive power and putting a premium on displacement (which makes for a wholesome type) is necessary. The same applies in a certain measure to some of the racing classes and, except in the championship events, the thing that should be striven at is the greatest speed with the most economical use of power due to fine lines in the hull and correct engine design. These are the things which a rating rule takes into consideration in working out a handicapping system.

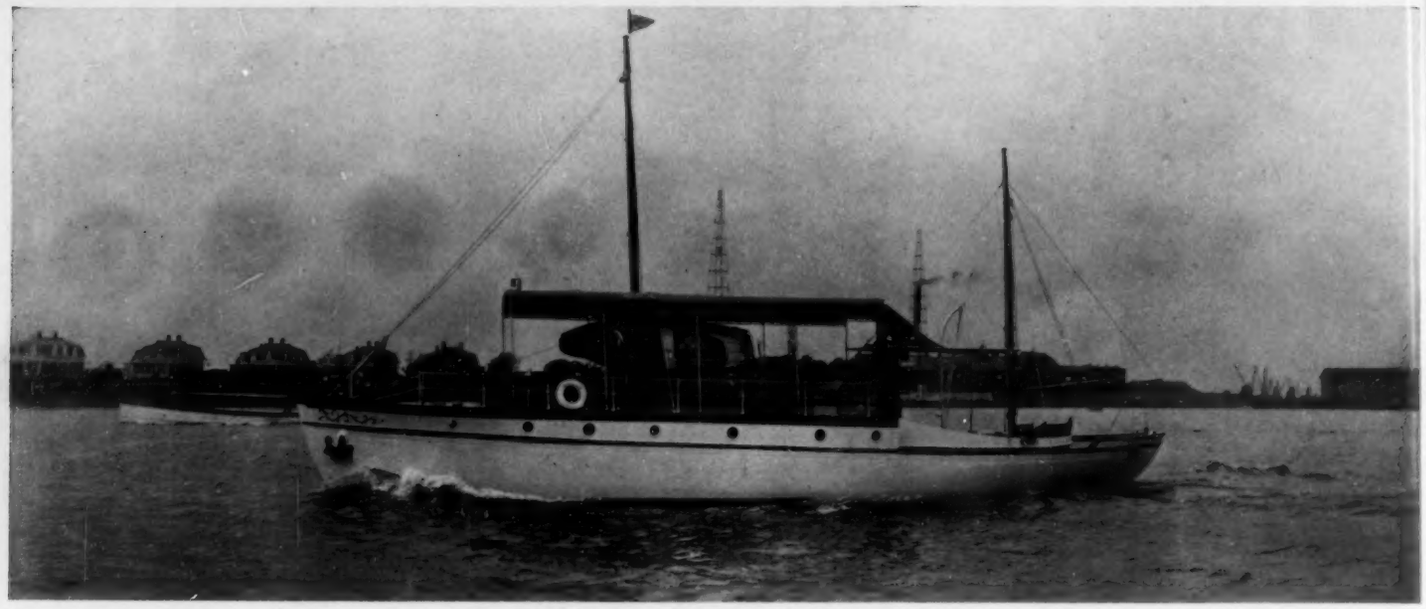
Commodore Osborn also goes on to advocate as the only solution of the question of racing, the adoption by the clubs throughout the country of a uniform restricted class for semi-speed boats, in which case he predicts a wonderful development in club racing. This is a good scheme, provided the restrictions are not too onerous, and has been advocated many times before. A *properly* restricted class allows play for all the skill of the naval architect and engine builder, and yet to a large extent keeps the boats within a fairly narrow range of cost. The restrictions which he advocates are length over all, water line, beam, displacement, cylinder volume and some scantling restrictions.

THE END OF THE SEASON.

In England they have had great success with the 21-foot restricted class of the British Motor Boat Club, where the restrictions have been practically the same as those mentioned above, with the exception that hydroplanes were not eligible in the class, and with a limitation on stroke. Some fine little boats have been turned out under the restrictions of this class and the racing has been keen, fair and enjoyable. In fact, the performance of this class saved the racing season on the other side and furnished the best sport witnessed in that country.

The Great Lakes Power Boat League, organized two years ago on the Great Lakes, has not only grown rapidly the last year, but has done splendid work for the motor boat interests along the Great Lakes, having promoted a number of successful events during the summer season and brought the clubs composing it into much closer relationship. Commodore W. E. Scripps, head of the League, has retired after doing a lot of work for the organization, and at a recent meeting Mr. C. H. O. Pook of the Royal Hamilton Yacht Club was elected Commodore. Mr. Scripps has taken a very active part in the promotion of the League, and his work has contributed largely to its success. The 1912 Regatta of the League will be held at Hamilton, Ontario, the early part of August. The Annual Scripps Cruise will start on the upper lakes and finish at Hamilton the day before the regatta starts.

Up in Rochester the Lake Ontario sailors are talking of a new club



ELOIS, A RECENT BOSTON CRUISER.

house for the Rochester Yacht Club at Charlotte. A new home for the club would be a good thing for the Lake Ontario tars and would probably give them one of the finest yacht clubs along the entire chain of Great Lakes. In connection with the house a new basin is to be built, the cost of the two undertakings being about $25,000. It is probable that ground will be broken next spring.

Hints on Towing the Dinghy

A FEW POINTERS ON HANDLING THE TROUBLESOME SMALL BOAT ON CRUISERS UNDER 35 FEET IN LENGTH.

THERE is probably nothing that causes the owner of a small cruiser, whether a sail or power boat, as much concern and trouble as the handling of his dinghy or tender while on port-to-port runs, especially when it has to be towed or stowed in the cockpit or on deck, as in the case of most boats under 40 feet in length which cannot carry davits. We all know how "cussed" the little things can act in rough water and in a following sea that threatens to heave 'em aboard with every scend or makes them take a sheer that nearly capsizes them when they fetch up on the painter.

There is a great difference in the towing qualities of different boats, the models of some being much better adapted for this work than others. Some have a tendency to bury their nose and take a sheer, while others drag considerably or squat on their tail and stick their nose up in the air when being towed at any kind of speed. As a rule a round-bottom boat will tow much better than a flat-bottom skiff, if we except the dory skiff or a boat with a "V" section forward designed especially for towing.

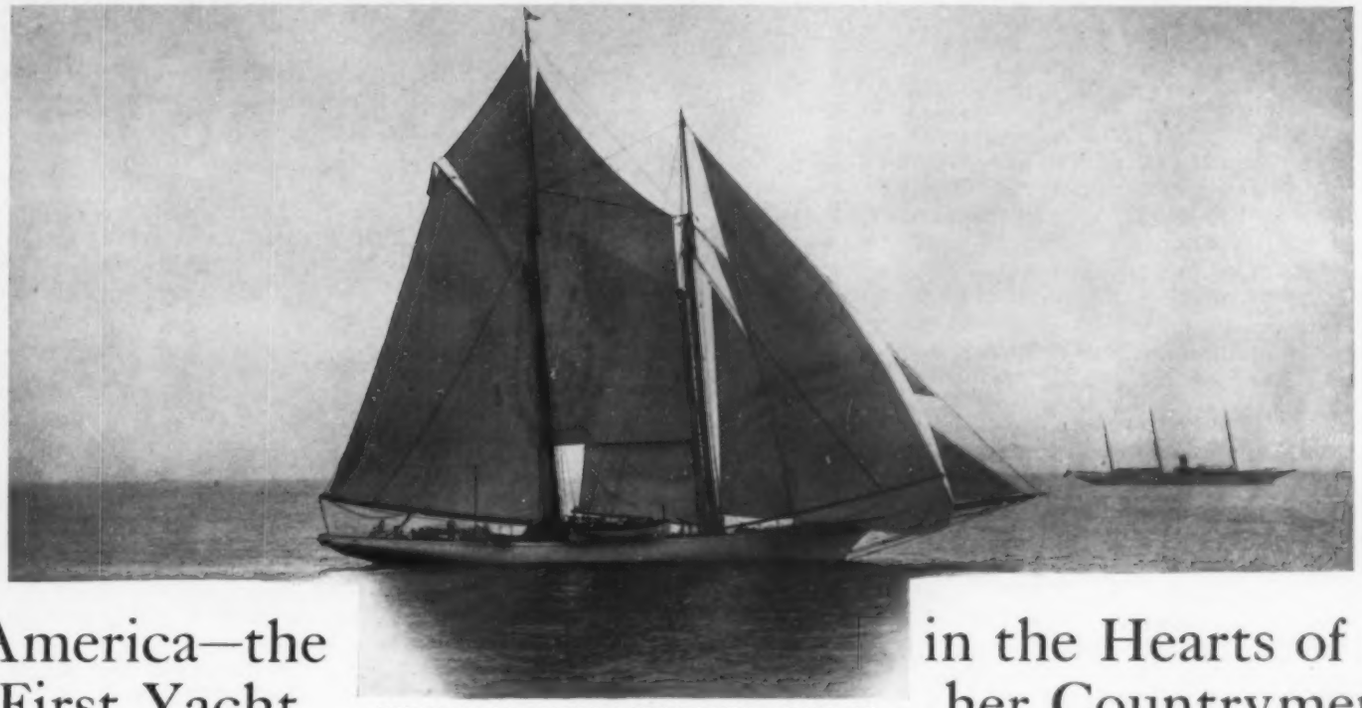
For a tender to tow properly, she should always be trimmed by the stern somewhat, and if she will not tow this way naturally, it is necessary to put a weight, such as a sand bag, large stone or a spare anchor weighing 30 or 40 pounds in the stern to keep her nose up. Another thing that will help to keep the nose up is making the painter fast well down on the stem piece just above the water line, and most boats built for towing have a ring bolt made fast at this point on the stem. It is surprising what a lot of difference in the towing a few inches in the lead of the painter will make. Watch the painter well for signs of chafing at the ring bolt, or where it comes in contact with the breast hook, if made fast inside the stem piece.

When much towing is going to be done, it will pay to have a good long painter on the dinghy, as the distance at which the boat is towed should vary according to different conditions of wind and sea. In smooth water and at a uniform speed a boat will tow very much easier if she is given enough painter to let her ride on the crest of one of the stern waves which the boat doing the towing makes. In a power boat, if the first wave is close under the counter, she will tow best on the top of the second stern wave, but if you get her back of the crest of that wave, she will pull much harder on the painter, owing to the fact that she has constantly to climb to the crest of that wave. In a power boat that runs at a uniform rate of speed, this position is unusually the same in smooth water, and the painter can be marked accordingly. In the sail boat, however, the speed varies and the distance to this following wave likewise changes so that it will take different lengths of painter for different speeds. In a following or bad quartering sea, much more line must be given the dinghy to keep it from coming aboard. In rough water 15 to 20 fathoms is not too much to give her, and the Gloucester fishermen often tow their seine boats at the end of a painter two or three times this length, where they ride much easier.

In a power boat the painter is usually made fast on the bitts or sampson post in the stern on the midship line, and sail boats frequently have a leader in the center of the transom through which to lead the painter. On sail boats, however, there are times when a boat will tow better from one of the quarters than from the center line. When close hauled in any kind of a sea a boat will tow much better from the lee quarter, while with a beam sea and on a reach she will do better from the weather quarter. On a power boat, however, where there is practically no leeway, the painter may always be made fast on a fore and aft midship line.

No hard-and-fast rules can be laid down on power boats as to the distance at which the tender should be towed. This distance varies with the speed of the boat and with the condition

(Continued on page 62)



AMERICA AS SHE APPEARED THE LAST TIME SHE WAS IN COMMISSION.

America—the First Yacht in the Hearts of her Countrymen

THE FIRST YACHT TO CROSS THE WESTERN OCEAN TO RACE IN A FOREIGN COUNTRY. SOME LITTLE-KNOWN INCIDENTS OF HER ILLUSTRIOUS CAREER.

By SEABURY LAWRENCE, JR.

Photographs by the Author and N. L. Stebbins

TO preserve for admiring posterity the physical remains of the most famous yacht ever built in this country, if not in the world, will possibly be the result of a combined movement on the part of American yachtsmen in the not distant future. For it is the opinion of many that the America should be perpetuated, not only because of the vessel's own brave deeds, but in some measure to immortalize a gallant age—those halycon years when American ships were swifter and more numerous even than those of England. In a way the America bespoke the bravery and broad courage of Yankee seafarers and yachtsmen of that day. She fared courageously across the seas, making a pioneer passage of the Atlantic for a racing yacht, and then won an aggressive victory over a goodly fleet of English cutters and schooners.

As did at a later day the great clippers Dreadnought, Flying Cloud and scores of others, so the America carried a keen realization of American prowess to foreign shores. Her little company of sailormen were dauntless and filled with that robust confidence typical of the age. Undiscouraged by the naturally cynical and adverse environment of the yachting world at Cowes, this company—owner, sailing master and men alike—were ready to wager heavily on the success of their champion. It is not of record that any large amount of money was laid on the outcome of the famous contest of August 22, 1851. Two wagers, however, of more than ordinary interest were decided by the result.

A suggestion was made by an enthusiast who recently saw the America lying at a remote Boston wharf, that the vessel in its entirety be placed in some great museum. To be sure the schooner was somewhat changed in that rebuilding by Burgess and Kelly in 1880; her planking, spars and smaller timbers are not wholly the same, but she is still the America. Her present lines surely suggest those of the "pilot boat" which captured the 100 guinea cup in the race around the Isle of Wight sixty years ago—the soul of the vessel is there and it would not be amiss to rescue at this time such a craft from marine oblivion.

What a career had the America! She is probably most widely known simply as the yacht which captured the Cup; but this was only the first of many interesting events, a sequence of vicissitudes which gives the vessel a quite unique place in the annals of racing yachts. Strangely enough that first syndicate of owners did not see fit to retain possession of the vessel that did so well at Cowes. Perhaps sentiment had no great hold upon them when actual racing was over. At any rate it is related that soon after winning the Cup, she was sold to a British yachtsman and thereafter was owned in England until purchased by some person of Savannah whose name seems to be unknown to historic records. This was in the first year of the Civil War, and the yacht was brought back to her native land to act in the capacity of despatch boat and blockade runner in the Confederate service. Previously, under her English owners, she had raced with fair success in English waters, had cruised to the Mediterranean and West Indies and had been laid up five years at the yard of a shipbuilder at Northfleet, England. In her Civil War experience she was sunk in the St. John's River, Florida, discovered by a Yankee gunboat, raised and turned over to the Naval Academy at Annapolis for the use of the midshipmen.

Subsequently she was purchased by General Benjamin F. Butler, took part in the international race of 1870, was raced with more or less success for some years after that and, until a few years ago, was recognized as a worthy member of the New York Yacht Club cruising squadron.

Such is a concise outline of the vessel's history. Probably for sentimental reasons General Butler purchased the schooner, rescuing her for a small sum from the obscurities of trade. He was much interested in the yacht as is shown by his book concerning the first race for the Cup and subsequent international contests. Older yachtsmen will remember General Butler racing

the vessel and cruising in her with the New York Yacht Club fleet. His researches are responsible for enlightenment on various periods of the America's career.

When the America fared forth to win her victory American shipbuilders were approaching the zenith of their fame. Extreme clippers were being turned out from noted yards at New York, East Boston, Newburyport, Salem and other places for the purpose of racing cargoes to China and Australia in faster time than that made by the British packets. Superior artistry in construction extended to smaller craft—coastwise vessels and yachts. Along our coast there were no smarter or more seaworthy vessels than the New York pilot boats, described as strong swift schooners of deep draught but moderate beam, that flew seaward in search of inward-bound vessels. Far eastward they cruised in their competitive search for ships, sometimes as far as Sable Island.

Often on winter days, yachtsmen of the older school foregather about the great fireplace in the model-room of the clubhouse and tell what they know of the America's record which began in the cradle days of American yachting, when the club was but a few years old, but growing under the brisk leadership of Commodore Stevens. John C. Stevens was the first commodore of the New York Yacht Club which was organized on board of his schooner yacht Gimcrack anchored off the Battery, New York, on July 30, 1844. The owners of the America were John C. Stevens, Edward A. Stevens, Hamilton Wilkes, Geo. L. Schuyler and J. Beekman Finley and the price paid for the yacht was $20,000.

Courtesy of H. E. Boucher Mfg. Co.

MODEL OF AMERICA AS SHE WAS WHEN SHE TOOK THE CUP THAT BEARS HER NAME. THE PILOT BOAT MODEL IS STRONGLY APPARENT.

A noted designer of the old-time pilot boats was George Steers, the son of an English shipbuilder who came to this country in 1819. In 1850 Steers was just thirty years old, but had turned out some very smart craft, notably the celebrated pilot boat Mary Taylor. It followed logically that when the pioneer navigators of the New York Yacht Club decided to send a vessel of fore and aft rig abroad to race, Steers was selected to design the yacht. A shipbuilder of more than ordinary merit in New York at that time was William H. Brown whose yard was at the foot of Twelfth Street, East River. It was at Brown's yard that the America was built.

If the younger men grow interested in the story and call for definite technical information about the America, there is nothing, perhaps, better than to show them the description that appeared in the *Spirit of the Times* a short time before the vessel sailed for England.

"She is 95 feet from stem to stern," says the paper, "80 feet keel, 23 feet beam amidships and her measurement is 170 tons. Her spars are respectively 79½ feet and 81 feet long." A precious fine rake had those masts as the younger men will note if they examine the excellent model of the America in one of the big glass cases at the N. Y. Y. C. The old Baltimore clippers were noted for this feature of construction. "Her main boom is 58 feet long," continues the description, "her main gaff 26 feet, her bowsprit 32 feet long. Her sides are planked with white oak, 3 inches thick; the deck with yellow pine 3 inches thick; the deck beams are also of yellow pine; all the coamings are of the finest mahogany; the rails which are composed of white oak are 14 inches high, 6 inches wide and 3 inches thick. She is copper-fastened throughout and copper-sheathed from keel to 6 inches above the water line.

"She draws 11 feet in racing trim. From stem to amidships the curve of sheer is scarcely perceptible, her gunwales being near straight lines and forming with each other an angle of about 45 degrees. Her frame is composed of five different species of wood—white oak, locust wood, cedar, chestnut and hackmatack and is supported by diagonal iron braces equidistant from each other 4 feet. She has a plain raking stern adorned with a large gilt eagle resting upon two folded white banners garnished with beautiful flowers of a green color." How meagre seems the sailspread of the sturdy America, 5,263 square feet, as compared with 16,000 feet for the Reliance.

As to the reason for sending a yacht abroad in 1851 it is recorded that a world's fair was held in London in that year and the suggestion that a racing yacht, built on the model of the famous pilot-boats, would be a most appropriate contribution from this country, resulted in the building of the America. British yachtsmen were naturally curious to test the merits of a Yankee fore-and-after against their schooners and cutters. As for a prize nothing was arranged as to any particular trophy to be raced for and the owners probably figured on racing for cash. That English yachtsmen were interested and that they were hospitably disposed is indicated by the letter sent by the Earl of Wilton, who was then Commodore of the Royal Yacht Squadron, to Commodore Stevens. This letter was as follows:

7 Grosvenor Square, London.
February 22, 1851.

Sir: Understanding from Sir H. Bulwer that a few of the members of the New York Yacht Club are building a schooner which it is their intention to bring over to England this summer, I have taken the liberty of writing to you in your capacity of Commodore to request you to convey to those members, and any friends that may accompany them on board the yacht, an invitation on the part of myself and the members of the Royal Yacht Squadron, to become visitors of the Club House at Cowes during their stay in England.

For myself I may be permitted to say that I shall have great pleasure in extending to your countrymen any civility that lies in my power, and shall be glad to avail myself of any improvements in shipbuilding that the industry and skill of your nation have enabled you to elaborate.

I remain, Sir, your obedient servant,

WILTON.
Commodore of the Royal Yacht Squadron.

AMERICA IN 1884 AFTER SHE WAS REBUILT BY BURGESS AND KELLY. THE RAKING MASTS ARE STILL IN EVIDENCE.

Before the America sailed for the other side her powers of speed were tried off Sandy Hook in races against the Maria, a large and fleet cutter owned by Commodore Stevens. These contests were somewhat disappointing, as the cutter won, but the owners of the America were nothing daunted by this, as the yacht showed excellent speed, and on June 17th, she sailed for Havre. She was in charge of Captain Dick Brown, a Sandy Hook pilot of notable attainments; Nelson Comstock was mate, and as passengers George Steers the designer, James Steers his brother and Henry Steers, the latter's nephew, went along. Including cook and cabin boy there were 13 persons on board and at times the passengers lent a hand in working ship. James Steers kept a "log" of the voyage—a most instructive and amusing account of the first transatlantic passage of a racing yacht. The schooner went across under "easy sail" rigged as a pilot boat, carrying neither fore-topmast nor jib-boom, in 17½ days. According to the log kept by Mr. Steers some excellent daily runs were made. For the nautical day ending at noon on June 22d, the vessel reeled off 284 miles, the record for the voyage. Other good daily runs were as follows: 276, 209, 219, 223 and 272 miles. There were some exciting races with clipper ships.

Commodore Stevens, who was to represent the other owners in the management of the yacht while abroad, went across by steamer. He was accompanied by Col. James Hamilton, father-in-law of George L. Schuyler, one of the owners who intended to make the trip but was prevented from doing so.

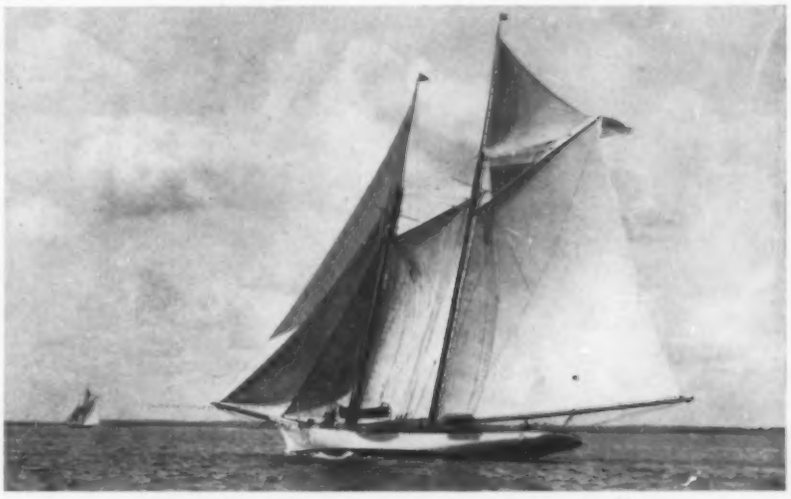
At Havre the America began fitting for a race. The hull, which had been gray, was painted black. Commodore Stevens lost no time in beginning his efforts to obtain a match, but this seemed a difficult thing. British yachtsmen were hospitable but seemed unwilling for one reason or another to send any particular yacht against the American invader. Commodore Stevens finally sent a challenge to the Earl of Wilton offering to sail the America against any schooner or cutter in the Royal Yacht Squadron "in a six-knot breeze" for 10,000 guineas. Captain Coffin in his comments on the subject said that this was a "staggerer" for the Britishers. The challenge came to naught and it was finally decided to enter the America in the open regatta of August 22d, for the 100 guinea cup.

No favorable impression was made on English critics by the America with her "long, low bow and thick, stiff-looking rakish masts." "A big boned skeleton she might be called, but no phantom," said one expert of the time and this might suggest that already the American "phantom clipper" had established world-wide fame. (It was said at the time, however, that the America's impromptu race with the British cutter Laverock on the day of her arrival at Cowes, in which the English vessel was outsailed, somewhat frightened the English yachtsmen. The London *Times*, as a matter of fact, went on record as saying the Britishers for a while acted "as a flock of wood-pigeons might at the appearance of a sparrow hawk.") Unaffected by the sceptical comment, those in charge of the Yankee yacht were brimful of confidence and she was ready for the starting gun in the morning of August 22nd.

AMERICA AS SHE HAS LAIN FOR THE LAST TEN YEARS ALONGSIDE CHELSEA BRIDGE, BOSTON.

Orders for the race, an open regatta, indicated that there would be no allowance of time for tonnage. The yachts were to start at 10 a.m. at Cowes and sail around the Isle of Wight, a distance of 53 miles. There was no time prescribed for accomplishing the distance.

The following memorable list of entries was made for the famous contest, and shows well the diversity of the fleet:



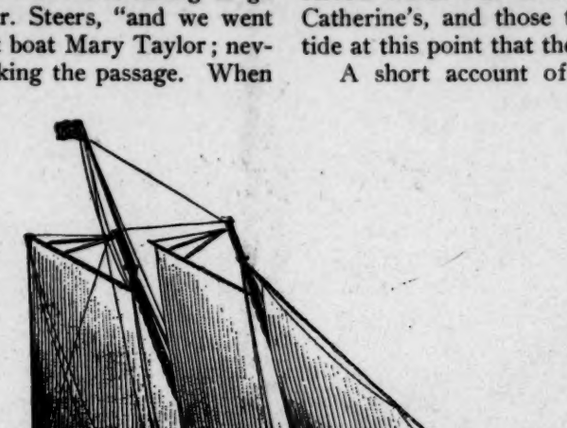
AS SHE APPEARED IN 1890 AFTER A REBUILDING IN 1885.

Boat	Rig	Tonnage	Owner
Beatrice	Schooner	161	Sir W. P. Carew.
Volante	Cutter	48	Mr. J. L. Cragie.
Arrow	Cutter	84	T. Chantebyne.
Wyvern	Schooner	205	Duke of Marlborough.
Ione	"	75	A. Hill.
Constance	"	218	Marquis of Conyngham.
Titania	"	100	R. Stephenson.
Gypsy Queen	"	160	Sir H. B. Hoghton.
Alma	Cutter	193	J. Wild.
Mona	"	82	Lord A. Paget.
America	Schooner	170	J. C. Stevens, etc.
Brilliant	3 master	392	G. H. Ackers.
Bacchante	Cutter	80	B. H. Jones.
Freak	"	60	W. Curling.
Stella	"	65	R. Frankland.
Eclipse	"	50	H. S. Fearon.
Ferrande	Schooner	127	Major Martyn.
Amona	Cutter	47	T. le Merchant.

Titania, Stella and Ferrande did not start.

Henry Steers, nephew of the designer was on board the America during the race and in a speech at a dinner at the Seawanhaka Yacht Club in 1877, gave an excellent account of some events before the contest and of the race itself. It will be seen from this that two very notable wagers were laid on the event.

"It was then considered something of an undertaking to go across the Atlantic in a yacht," said Mr. Steers, "and we went over with only the small sails of the pilot boat Mary Taylor; nevertheless we were only 17½ days in making the passage. When we got to Cowes I remember it was considered very presumptious on our part to entertain the idea that we could build a boat that could beat their 'out-and-outers.' There were two or three races before ours came off, and we used to get under way with jib and mainsail and go out with the racing yachts, and it was just as certain we could beat them as that the sun would rise.



LINE DRAWING OF AMERICA AS SHE WAS RIGGED WHEN SHE TOOK THE 100 GUINEA CUP IN 1851.

"Some of the gentlemen of our party wanted to make their expenses after coming so far and they went to one place and another trying to get a little money on the race, but their success was not brilliant. We were rigged pilot-boat fashion, having no foretopmast and no flying jib-boom and, as we thought we could do better with a flying jib, we went to Ratsey, at the Isle of Wight, to get him to make the spar. My uncle bet him the price of that jib-boom that we could beat any boat that he could name, and he named the Beatrice. Well, then we went to a sailmaker's to have a flying jib made and we bet the price of this sail on the race. We won these two wagers and that was all we did win on the result.

"There were 8 cutters and 7 schooners in the race; the cutters lay in line ahead and the schooners were about 300 yards astern. The wind was from the westward. The yachts were allowed to get up their sails after the first gun but we found that we constantly overran our anchor and slewed around, and we had to lower our sails, so that all the yachts got off ahead of us. However, we had a large crew and got our sails up very quickly. By the time we got to the Nab we had walked through the whole fleet except four—the Beatrice, Aurora, Volante and Arrow. We were running wing and wing and these boats would steer close together so that when we tried to get through them we could not without fouling, and had to keep cutting and sheering about, very often being near jibing, but finally we managed to get past the fleet.

"From the Nab to St. Catherine's the wind was ahead, and there we left them so fast that when we got down to the Point there was not a yacht in sight. Here we caught the tide and for a long time made little way beating against it, and the little Auro came up pretty near to us and the Arrow was just behind h After getting by St. Catherine's Point we had a leading wind a we went from there to the Needles at a rate of 13 to 14 kn Off St. Catherine's we carried away our flying jib-boom and remember that Dick Brown said he was d—d glad it was gone he didn't believe in carrying a flying jib to windward. We arriv at Cowes, winning the race, at about 8 o'clock.

The America anchored at 8:35, and 20 minutes later ca the Aurora, a cutter of 47 tons. "Had there been an allowan of time for tonnage," says one account, "the Aurora, by Acke scale, would have been beaten less than two minutes. Had t drifting continued an hour or so longer it would have given h the Cup."

Although there was a "second" in the race despite the fam conversation attributed to Queen Victoria and her signal mas there was actually no third out of the 15 starters. The slo Arrow which was in third position at the time, grounded at S Catherine's, and those that followed found such a strong he tide at this point that they were obliged to give up the race.

A short account of the contest published in an Americ paper after the English papers rea ed this side by mail was as follows:

"Starting at 10 o'clock with a lig westerly wind, at about 11:30, aft the yachts had turned No Man's La and were beating to the westward, t wind freshened to a good 6-kn breeze for a short time, at the end which the America's position was miles to windward of the nearest yac The wind then died away and t yachts beat slowly up under Shank Chine with a strong head tide, t America still widening the distance. 3 o'clock the wind freshened again, a when at 5:40 p.m. (the America havi carried away her jib-boom) round the Needles the Aurora (47 tons, t smallest entry) was, by the best En lish report of the race, about 8 mi astern and the rest of the squadron w not to be seen.

"Second, that the wind bearing lig again and the tide ahead, the Ameri anchored, winner of the Cup at 8:35 p.m., the Aurora 8: p.m."

In the speech delivered by Mr. Steers at the Seawanha Club he remarked that "There was an awful crying and moani about Cowes that night. Ratsey and other builders were mu chagrined, but they all said they could *build* a boat to beat t America. 'Well,' said John C. Stevens, 'what will you do?' Th said, 'We will build a boat in 90 days that will beat the Ameri for 500 pounds.' He said, 'That won't pay us for waiting 90 da Make it $25,000 and we will wait and sail the race.' They wou not do this and so it came to naught.

"In this aftermath of astonishment at Cowes there came protest from one of the competing yachtsmen. Mr. Acke owner of the Brilliant, sent in a protest the next day again awarding the Cup to the America on the ground that she passe on the wrong side of the Nab Light. Fortunately the sailin directions sent to Commodore Stevens gave no instructions that head and the account was therefore dismissed."

A few days after the race around the Isle of Wight, t

(Continued on page 62)

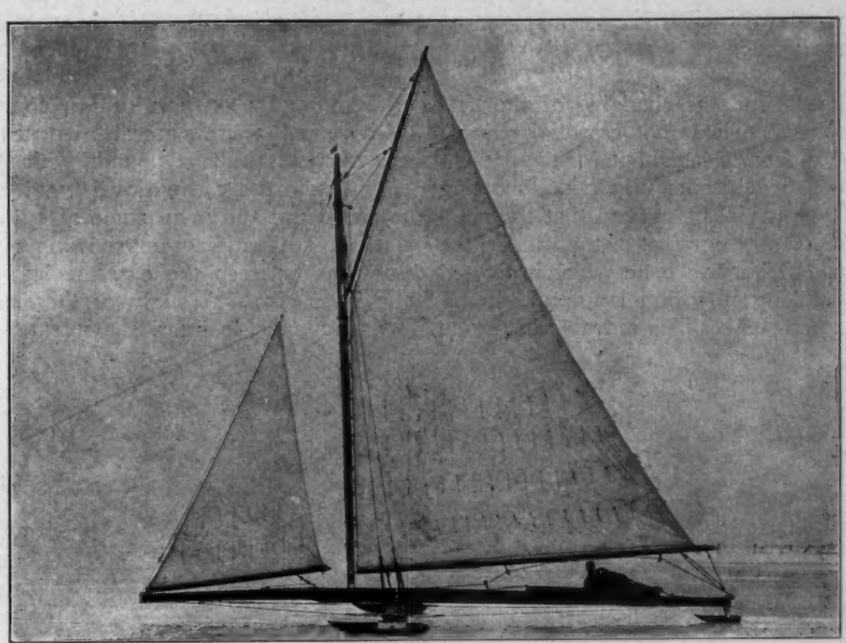
The Ice Boat Up to Date as I See It

By DR. WILLIAM M. STANBROUGH.

A NUMBER of years ago, hunting and fishing having lost their charms as winter sports, I became interested in ice yachting, and after talking it over with the late Commodore Higginson of the Orange Lake Yacht Club, I decided that I would build an ice boat. The Commodore gave me some of the parts, runners and so forth, saying that was the way everyone began. Others also contributed various parts, and after getting together a collection of odds and ends I started in to build. Up to that time I had had but one ride on an ice boat in my life.

The design I followed was the conventional one published in one of the boating magazines of a craft carrying about 200 square feet of sail. The only thing that went into that boat that was old was the sail, and as none of the parts which were contributed fitted just right, I studied the question to see where I could improve on the boat; and I have been studying the problem ever since. That first boat was named the Odds and Ends. It had a regular two-piece backbone, and basswood runner plank and was equipped with solid spars. She sailed fairly well but had the fault of the common type of capsizing easily and of "flickering." One day the sail filled with no one aboard and the boat went ashore with the windward runner about four feet in the air. Some of the iron work could be used subsequently, but the wood work made good kindling wood.

This set me to thinking on the problem of greater stability and the design of ice boats in general. It was plain that the old conventional type had been brought to the highest point of perfection as regards lightness of construction, hollow spars, etc., and it was no use trying to beat the best that the old type could produce by following the same lines.



Ice boat Square People, 590 feet of sail. Built after "Heavy Weather" Model with cockpit well forward on backbone. Has been very successful.

I realized that an improvement in design must be the first step. Many people are afraid of the old type when the wind starts to blow, and with good reason, on account of the danger of capsizing or the boat's becoming unmanageable when one runner lifts. Naturally, increased stability was to be desired; and with stability gained, the weight of the boat could be cut down on a given sail area, which should increase the speed.

So my next boat was one in which the cockpit was further forward on the backbone, bringing the center of gravity forward and further from the line of stress, where it would do the most good as ballast. The tiller and rudder were connected by a chain running on sprockets. This type I called the Heavy Weather model, and I made three different boats after it. It was fully described in the December, 1910, issue of YACHTING under the title of "An Improved Ice Boat." The first and second boats were much too heavy, but for 250 feet of sail, a backbone 26 feet long with a 12-foot runner plank would be about right, with the cockpit 3 feet 6 inches forward of the rudder. I think this boat an improvement over the old type, and a number have been built in various places which have achieved great success. Just after I completed the last one I thought that I was through, and that the last words on ice boats had been said, but as the varnish was drying an idea occurred to me of a still better way to increase the stability and thus carry more sail on a given length. The idea is still one aiming to get the center of gravity to windward of the line of stress; this increases the stability without increased weight. I accomplished it by utilizing the force of both lee and weather sail—that is, trying to break the backbone in two at the runner plank fore and aft of the point of lateral resistance, giving a forward or rigid part and a rear or movable part to which the cockpit is fastened and moves with it. To bend or warp this backbone, a means of control is needed, and can be worked out successfully in several different ways. Such a boat can be made lighter for a given sail area and can carry a higher sail plan, which will be more effective. The idea has worked out so well that I have applied for a patent on the principle, and allowance has been given.

Figure No. 3 shows the conventional ice yacht with rigid frame and with the center of gravity of boat, and of boat and crew worked out. Figure No. 2 shows my improved ice yacht with the centers of gravity approximated, and with the additional improvement of a method of shifting these centers to windward of the line of support or stress by means of a movable or hinged after part of the backbone to which the rudder is fastened. By means of a lever the conventional equal sided triangle is changed into a scalene, or an unequal sided triangle. The long side of the triangle being to windward and the short side to leeward changes the keel from the conventional straight one to an obtuse angle, the shorter portion being at the stern as shown. (See Figure 2, positions 1 and 3 showing movable part, or lever, in windward or leeward positions.)

It will be seen that by attaching a weight to the forward end of the lever, it can be moved to windward at the desire of the operator, or the movement of the lever can be made automatic by attaching the main sheet to the top of the rudder post, or at some other convenient point at the end of the movable part, where the pull of the sheet will throw the weight at the other end of the lever up to windward; or it can be made semi-automatic by a lever and wire rope properly attached, the sprocket and chain or drum and cable being still used to control the rudder as in the Heavy Weather model before described. In a light

wind if it is desired to have less weight on the windward runner, so that there will be practically but two points of support to reduce friction, the above can be reversed, with the result that the boat will move faster in a lighter wind.

As will be noted, the stability is increased by moving the rudder support to leeward, as the weight of boat and load act through the longer lever, and the weight of the entire outfit is turned into ballast, excepting the lee runner and the rudder, making it possible to use a smaller structure of very much less weight for the same sail area, thus increasing the safety, speed and pleasure of operating an ice boat. In the boat under consideration in this article, the runner plank was 25% shorter than in the regular type. There are several other ways of moving this center of gravity to windward of the line of support, and the changing of the keel from a straight line to an obtuse angle is not essential. Some of these other methods will be spoken of later, but for the present we will confine ourselves to the model under discussion, showing its advantages. In this new type it will be noticed that the rigid backbone extends only to within about four feet of the rudder, the latter being carried on a movable keel or backbone, which is pivoted to the after end of the rigid backbone and with a long arm extending forward as far as the runner plank. This movable backbone carries the cockpit, and its forward end has 27½ pounds of lead ballast.

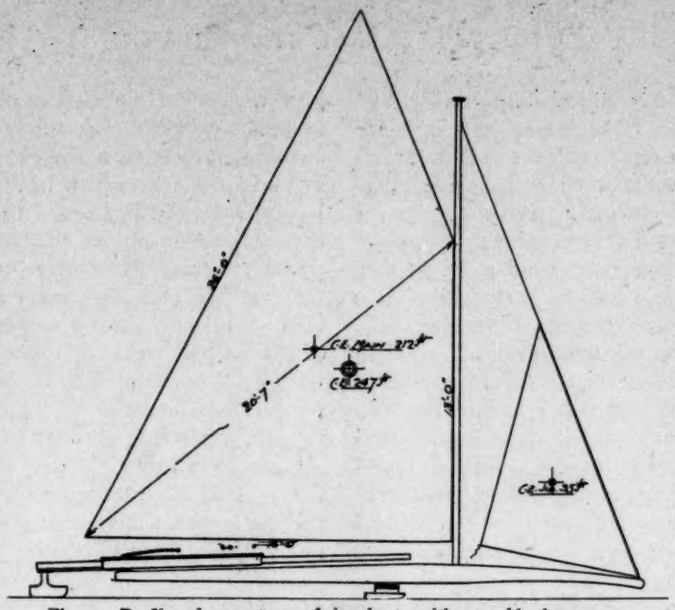


Fig. 1. Profile of new type of ice boat, with movable lever arm carrying cockpit pivoted on rigid keel or backbone. 247 square feet of sail.

It will be seen that with the pull the main sheet at the rudder (point D, Fig. 2) the long lever arm carrying the weight of crew and the ballast will be thrown up to windward, thus increasing stability.

The following tables on page 31 show just what is gained in stability and what can be saved in weight with this type of boat as against the conventional one with the solid backbone. For comparison, the weights and figures of the conventional type are taken from the ice boat Gale, where actual weights and figures were available, while with the new type of boat the actual weights of the various parts are given, showing a decrease of 27½ lbs., which is the amount of ballast added to lever arm to bring the total weight up to the conventional type of boat for the purpose of fair comparison. Centers of gravity of boat and of crew are also worked out. The three tables give the moments in foot pounds with the movable backbone amidship (as in the conventional type) at an angle of 19½ degrees to windward and at an angle of 19½ to leeward.

Fig. 5 is a diagram showing righting moment for various positions between the extreme leeward and windward ones of the lever arm. A study of these tables shows an increase of nearly 200 lbs. in righting moment between the new type of boat

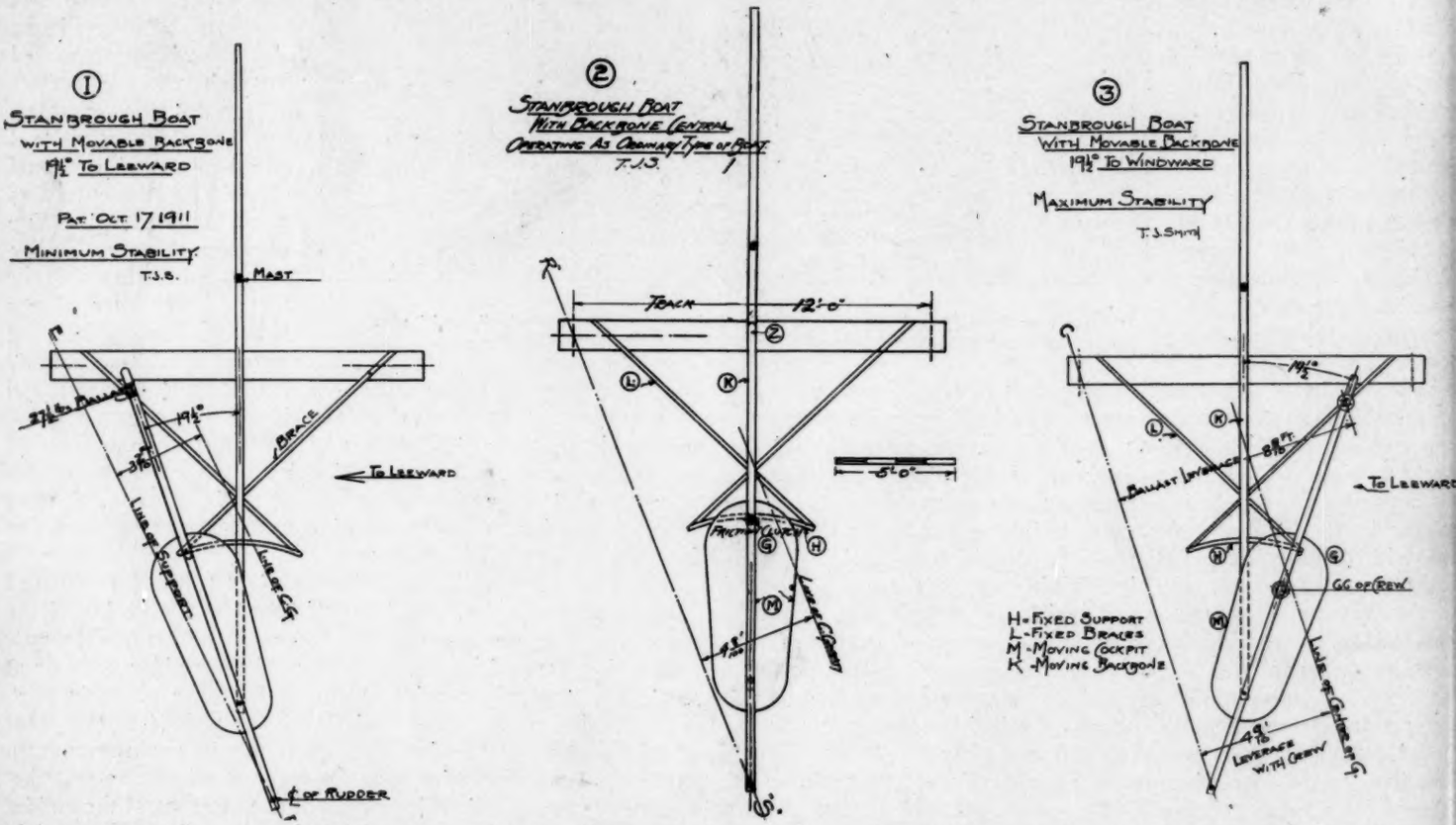


Fig. 2. Plan of new type with movable backbone carrying cockpit and crew. Position 1, lever arm to leeward. Position 2, lever arm in center. Position 3, lever arm to windward. "G", center of gravity, boat and crew.

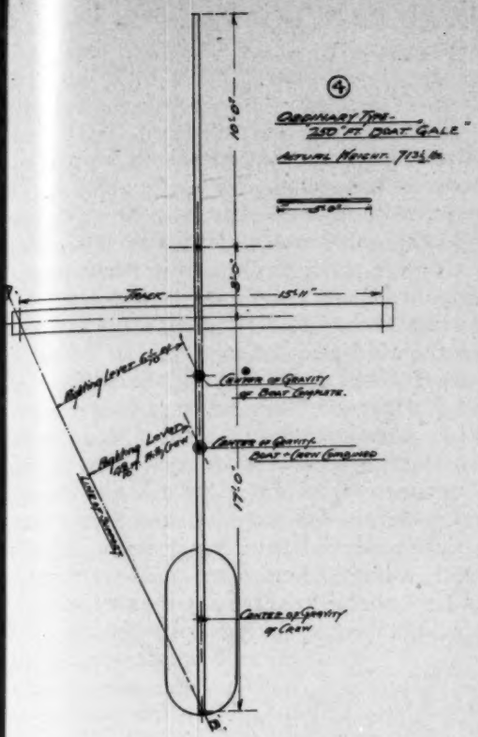


Fig. 3. Conventional type of ice boat. Actual weight 713½ pounds. 250 square feet of sail. Shows centers of gravity of boat and of crew.

and the old type as exemplified in the Gale, yet the latter had a runner plank of 16 feet as against 12 feet in my boat and much heavier runners.

There are various methods of controlling the movement of the movable backbone or lever arm, one of which is by a friction clutch placed in the forward end of the cockpit handy to the helmsman's hand, whereby the friction of the lever arm on the guide between the two cross-bars L is increased or lessened at will, so that the movable part may be fixed in any desired position. It

ward, there are two in the form of the letter "V", meeting and being bolted through the movable rudder support and extending forward to and resting on the cross runner-plank. These two arms carry the cockpit and crew and simplify greatly the details of construction. Where the two arms meet the movable rudder support they are strengthened by a ¼-inch V shaped iron plate on the top and bottom as shown in the cut, through which work the pivot at the end of backbone and the tiller head. In this case control is very eas-

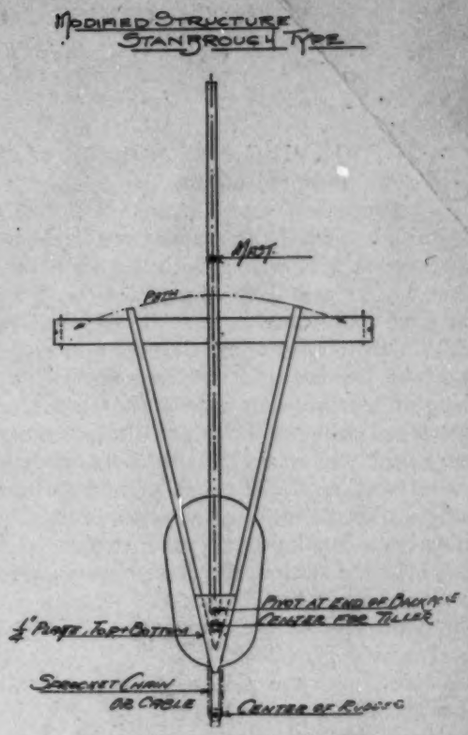


Fig. 4. Modification of Stanbrough boat with cockpit carried on two movable lever arms pivoted to rigid backbone, utilizing weight of crew as ballast.

Position 1—Movable Backbone to Leeward.

Item.	Weight, lbs.	Leverage about line EF.	Moments in ft. lbs. about E.F.
Backbone K	166	5.3	880
Cockpit M	105	.8	84
Plank	95	5.4	513
2 runners	60	5.4	324
Mast	43	6.7	288
Boom	20	3.5	70
Gaff	10	5.7	57
Jibboom	5	8.8	44
Rudder	26	0	...
Tiller and gear....	14	.4	6
Sails	24	4.7	113
Clutch G.....	8	1.0	8
Braces H. & L....	50	3.5	175
Ironwork	60	5.4	324
	686		2886
Crew	300	.9	270
	986		3156
Ballast	27½	1.8	49.5

Total weight..1,013½ Right. mo. 3,205.5
Righting leverage about EF ...3,205
=3.2
1,013½

Position 2—Movable Backbone in Centre.

Item.	Weight.	Moments in Lever- age. about	ft. lbs. RS.
Backbone	166	5.4	896
Cockpit, M., etc...	105	2.5	262
Cross plank	95	5.6	532
2 runners	60	5.6	336
Mast	43	6.7	288
Boom	20	3.9	78
Gaff	10	5.9	59
Jibboom	5	8.5	42
Rudder	26	.0	...
Tiller and gear ..	14	1.3	18
Sails	24	4.9	118
Clutch G	8	3.2	26
Braces H. and L...	50	3.9	195
Ironwork	60	5.5	330
	686		3,180
Crew	300	2.7	810
	986		3,990
Ballast Z.	27½	5.5	151

Total .....1,013½ Right. mo. 4,141
Right. leverage about line RS...4141
=4.08
1013½

Position 3—Movable Backbone to Windward.

Item.	Weight, lbs.	Leverage about line EF.	Moments in ft. lbs. about CD.
Backbone K.....	166	5.6	930
Cockpit and bar M.	105	4.0	420
Cross plank	95	5.7	541
2 runners	60	5.7	342
Mast	43	6.6	284
Boom	20	4.3	86
Gaff	10	5.9	59
Jibboom	5	8.0	40
Rudder, etc.	26	0	...
Tiller and gear....	14	2.0	28
Sails	24	5.2	125
Clutch G.....	8	5.3	42
Braces H. and L..	50	4.3	215
Ironwork etc. ...	60	5.6	336
	686		3,448
Crew	300	4.5	1,350
	986		4,798
Ballast	27½	8.8	242

Total weight...1,013½ Right. mo. 5,040
Righting leverage about CD...5,040
=5'
1,013½

Righting Moments, Calculated for Conventional Type of Ice Boat Gale.

Item.	Weight.	Moments in Lever- age. about	ft. lbs. AB.
Backbone	288	5.6	1,613
Cross plank	143	7.2	1,030
2 runners	80	7.2	640
Mast	39	8.5	331
Boom, 18 ft. 6 in.	21	4.8	101
Gaff	9	7.3	66
Jibboom	5	11.5	57
Rudder, etc.	29	0	0
Tiller	9½	.7	7
Sails	24	5.9	142
Ironwork, etc.	57	7.0	399
Total	713½		4,386
Crew	300	1.6	480

Total weight...1,013¼ Right. mo. 4,866
Righting leverage about line A-B..4866
1013½
4.8'

can also be worked out with a wire rope, working over a drum in the center of the movable backbone and controlled as in the other case by a clutch or small hand lever.

There is a still further modification of this principle, and a much simpler one, which is shown in Fig. 4, in which the movable portion carrying the rudder is pivoted on the fixed backbone as in the previous example, but instead of having one lever arm extending for-

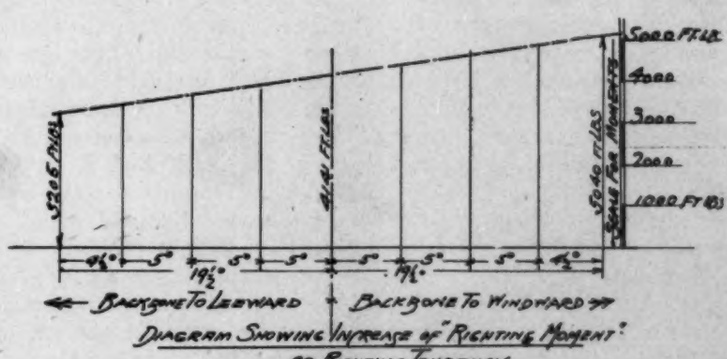


Fig. 5.

ily worked out by means of a wire rope from each lever arm to the backbone and to a clutch in the cockpit. Fig. 1 shows the new type in profile, and explains the method of pivoting the movable portion upon the rigid keel or backbone.

In placing this boat before the public I have not gone into the minor details of construction, as I am only explaining the principle here. I built such a boat last year, and tried her out with very good success.

The Log of the Adventuress

A WINTER CRUISE TO THE WEST INDIES IN A 53-FOOT AUXILIARY SCHOONER. PART III—FROM GUANTANAMO TO MIAMI, FLA.

By E. B. GREEN, JR.

ON ARRIVING back at the naval station at Guantanamo, we anchored off the station-ship Newark and that evening called upon Commandant Ball, on board the famous old ship, to find if there was any place where we could haul out to see what was wrong with the propeller. We were told that there was no crib deep enough for the Adventuress, and the only thing we could do was to send down a diver.

While in swimming the next morning we discovered the cause of the engine's sudden and violent racing, for only one blade of the propeller was found remaining. It was imperative that we should get it replaced before proceeding north, and arrangements were made with Commandant Ball to send down divers to take off the propeller and stern bearing. This proved to be a difficult task and took three days. While the work was going on a Sunday intervened, so that we had plenty of time to look over the station, the marine camp, several of the ships, and to return again to Caimenera.

At the end of the three days, during which time we hauled in alongside of a dock, the diver, with the aid of a machine shop, had replaced the propeller with the only suitable one to be found at the station. On her trial trip, however, she showed a speed of only 4½ miles an hour with this wheel. But as the stern bearing had been made true, we felt satisfied. It was lucky that we found it and had it overhauled when we did, as the breaking of the stuffing box at sea would have been a bad thing to handle.

THE DIVER AT GUANTANAMO WHO REPLACED THE PROPELLER.

Just after colors that night we cast off the lines and started down the bay, getting sail on her as we went. There was a light northwest wind and we sailed down by the fleet which was now illuminated, while the bands of some of the ships were playing. On reaching the mouth of the harbor we struck a fine, fresh land breeze. This, however, lasted only about two hours when the wind hauled to the east. This was ahead, and kicked up a bad chop and we had a head current as well. At 11 the watch below reported that one of the sea valves was leaking and the bilge water was above the cabin floor. At this, Mr. Moot, the skipper, wisely ordered her to be put about, and we soon regained our original anchorage at Fisherman's Point.

We arose late the next morning. The harbor was as calm as a mill pond. About nine, there seemed to be a little upper air, so we got under way again for Miami and the "States," and drifted out of the harbor, striking a good fresh southeast breeze as soon as we were clear of the mouth, and we were able to make a long reach along the coast towards the eastern end of the island, 60 miles away. About noon the wind hauled to the east, and Capt. Moot laid his course out to sea to keep clear of a squall gathering over Guantanamo. So we ran E.S.E. all that afternoon and night, with a fresh breeze. At daybreak the wind kept hauling to the north and we followed it around. At sun-up we saw that we were north of the southwestern peninsula of Hayti, and could make out plainly its high mountains. The east end of Cuba was also visible.

As the morning grew the wind died out, until we lost steerage way. The current, however, sets down through the Windward passage with such strength that we were being carried toward the coast of Hayti, while Cuba had nearly faded from sight. At nine the engine was started, and we laid our course to the east, thus striking the counter current along the coast of Hayti, instead of striking directly across for the eastern end of Cuba. This was a wise move since we could do only 4½ miles an hour under power, and had only a limited amount of gasolene aboard, as the naval station had been unable to spare any the day we left. During the afternoon a light breeze sprang up from the west and before dark Cape Haytien, then in the midst of a revolution, was sighted. Towards evening the wind hauled to the north and freshened, with a falling barometer. At ten a nasty squall coming off from Hayti struck us, and the watch below had to be called out to help lower the mainsail. While this was being done the yacht got well soaked down and the steward was drowned out forward. The course was changed to north by west, and this we held all night under jib and foresail, through a choppy sea which knocked her about badly. The wind was a hot breeze right off Hayti, and in the morning every one felt the effects of a sleepless night.

At eight it grew calm though there was still a bad roll to the sea. The engine was started and kept running until noon, when we picked up a light east wind. It was very hot, especially at the wheel, until late in the afternoon, when the wind freshened. Cape Maisi with its arid, palisaded hills gradually drew nearer. The light was passed at six, and about the same time we met a string of six United Fruit Company's ships, all bound for Jamaica. Towards 8 o'clock the wind was nearly gone again and remained light all night. Just before morning came we picked up a light off-shore breeze and a heavy roll from the north, which caused the rigging to do a good deal of slatting, but every one was getting used to these noises, as one does to trolley cars or an alarm clock. The log showed 22 miles for the night run, and as the morning wore on the wind dropped entirely. Soon we were in an oily calm, and all on board amused themselves

watching the dolphins swimming about the ship's side. The brilliancy of their coloring which embodies every color of the spectrum, soon had a line of enthusiastic observers along the ship's side. These fish would smell at the bait, but showed no signs of taking it, probably because it could not be made to move fast enough through the water to resemble a flying fish.

About noon we picked up a fair northeast wind which held fresh all the rest of the day as we ran along the northeast coast of Cuba. Another squall struck down about 10 that night; when the port watch turned out again to lower the mainsail. This squall came up wind and made a terrific chop. At midnight it was drizzling without a breath of air, and the ship rose and fell and rolled about like a cork. About two we got a light breeze from the northeast which gave us a little headway. We were then well off shore. In the morning there was still no wind, and it remained cloudy all day, with a heavy swell. By afternoon we had worked well in towards the land, and it was very green and beautiful, which quite surprised us, for Cuba is usually dry and brown. The mountains were very curiously outlined against the sky and looked like a rough row of fangs. About 4 o'clock we were off the little walled town of Gibara, where we decided to put in, entering the harbor in a blinding rain squall.

As we dropped anchor we fired a salute, so that it was not long before a motor boat put out with nine Cubans on board. Among them was the port doctor, the customs house officer, the pilot of the port, and the owner of the only motor boat in town. The rest were a number of curious citizens, all smelling of rice powder and jabbering like monkeys.

On leaving Jamaica, Capt. Moot had gotten no bill of health from the Consul, believing that Dr. Barton, acting as ship's surgeon, was sufficient guarantee for our good health. We were allowed to land in Caimenera, but were not given clearance papers from there. This greatly upset the doctor at Gibara, and he said we could not land until he telegraphed Havana. All that anybody wanted that night was sleep, so no argument followed. The pilot then announced that it was necessary to take a pilot on entering port, so he insisted on moving the yacht a few boat lengths. It was not until four the next afternoon that anyone came out to us; then some official came to announce that permission had been granted for only the Captain to land. Mr. Moot does not speak Spanish, so Dr. Barton decided to go along as interpreter, as he knew how to say a few complimentary personal remarks in that language.

They called on the chief officer of the port, a little man with the manners of an ambassador, who luckily spoke English. He gave us a permit to buy supplies, and extended to all of us permission to come ashore. He also told us that we could not leave the port until he gave us a despatch, and expressed a desire to have a sail on the yacht.

We ordered water here and it had to be brought out in casks. It is very precious stuff in this town and they charged over two cents a gallon for it. The supplies were all aboard that day and plans had been made to sail without the despatch, as we felt it was a useless slip of paper, but we were invited to a grand ball at the Spanish Club that night, and stayed over for it.

We lay around the deck all the next day, resting up from our labors at the ball. At 4 in the afternoon Capt. Moot ordered the mainsail set, and stops loosed preparatory to getting under way.

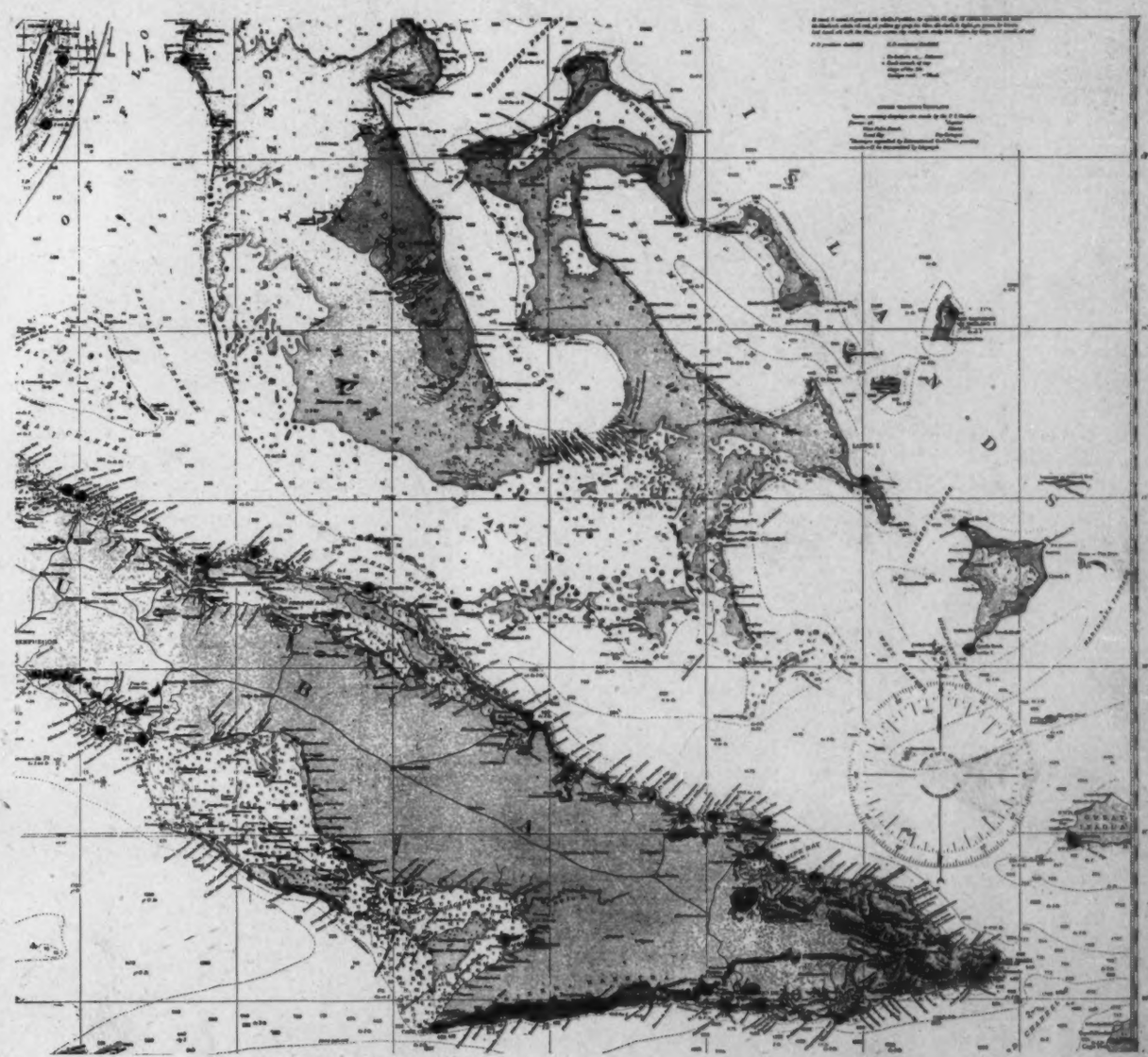


CHART OF EAST END OF CUBA, THE OLD BAHAMA CHANNEL AND THE COURSE TO MIAMI.

Photo by W. B. Jackson.

SCHOONER TA

A CLOSE REACH.

ON THE WAY NORTH FROM MIAMI WITH A FAIR WIND.

About this time a squall was gathering to the eastward which looked very black. Without warning it struck us, and before we had time to lower the mainsail the anchor was dragging. It was badly fouled and had practically no hold, so that we suddenly found ourselves on top of a long steamship pier. The engine was started, but the wind was so strong it did not have enough power to hold us up against it and we kept on dragging. The rain drove in our faces so hard that we could not see to work, and we had the greatest difficulty in getting the mainsail in and stowed. A line was finally passed to the pier in time to save the launch on the davits, and as soon as the wind abated, we worked out to a safe anchorage. Here we lay in muddy water from a river, now dreadfully swollen, and bearing on it dried sugar cane stalks swept down by the flood.

As the dispatch had been granted that day, we set sail at seven the following morning for Miami, Fla., with a light shore breeze. When well outside we got a north wind, which is very unusual at this season of the year. This held until afternoon, when a squall crept out over us from the shore. It looked like a large inverted saucer, and its edge was clean cut and inky black. It brought heavy rain, but not much wind, and passed, leaving us in a calm.

At 4 in the morning the wind was off shore, and Maternallos Light on the Cuban coast was visible. We were only making about two knots an hour. Later in the morning we picked up a good fresh northeast breeze, which held all day. At 5 we made out Lobos Key Light. We had thought of running into the lee of this light and anchoring over night, as we were all tired and the Old Bahama Channel lay before us, which is narrow and dangerous to work through at night. But when we got there we found it too rough for anchoring. About 10 o'clock we bore away for Paredon Grande Key Light, a run of 25 miles. The port watch came on deck at midnight. At 3 we were well up on the light, sailing with a good fair wind, but the watch discovered that the current had set them off their course to the south, so they hauled more off shore. At 4 the skipper came on deck and gave the watch a dressing down for not calling him, for even then the bottom was visible under us in the moonlight, so close were we in.

The next morning we were still off the light, in a calm, but about noon caught a light breeze and soon passed Guinchos Key, on the north side of the channel. The tide had set us completely across the channel from one side to the other during the calm, and very fast at that. It emphasized the necessity of auxiliary power in these waters, for without it a ship is almost helpless at times. A northeast breeze now struck in and the course was laid N.W. across the Bahama Bank, so that all that afternoon we were sailing in five fathoms of water and could plainly see bottom, while no land was in sight. We carried all sail through the evening though the wind kept freshening, until finally the fisherman's stay-sail split. The wind was astern now, and a considerable sea was running, so that it took careful steering to keep from jibing when she would yaw on top of a sea. We couldn't change the course to bring the wind on the quarter, for on the run from the Old Bahama Channel to Miami, Florida, right across the Gulf Stream, the greatest precaution had to be taken to steer a straight course.

The breeze was now fresh off the water and the torpid air of Cuba had been left behind. The wind kept freshening hour by hour and the sea was getting higher as we got into the Stream, but it was wonderful sailing. About 5 we began to sight steamers, and then the low keys of Florida. As soon as it was dark we picked up Carysfort Reef Light. Capt. Moot had laid his course to pick up this light, but there was considerable speculation on the landfall, because it is impossible to figure exactly on the current of the Gulf Stream, for its speed varies considerably. We made up a pool on board, some betting on Miami Light, 24 miles to the north, others on Alligator reef to the south, but the skipper won the pool. He then ran in behind a reef a little to the north of Carysfort Light, as it was impossible to run into Miami after dark, and anchored in a bad sea, but every one on board was glad to get some rest.

WHAT A HURRICANE LEFT ON THE FLORIDA KEYS.

At 6 the next morning, May 24th, we got sail on her again and were off Miami by noon, Capt. Moot taking her through the outer channel into Biscayne Bay (undoubtedly the worst channel on the Atlantic Coast) and we anchored safely off the little town, now looking quite deserted with its winter hotels closed. But it looked mighty good to us, so clean and so American, for it was our old U. S. A. once more with our own countrymen about on shore.

Then some one thought we ought to hoist the quarantine flag, and see the port doctor and customs house officer. We were certainly learning. But this was the United States and there wouldn't be any

red tape as at Kingston or Gibara. So Capt. Moot went ashore to the custom house. Here he learned that the port doctor wanted a bill of health. We had none (as usual), as again it had not been thought necessary. Washington was wired, and we were finally passed without any restrictions the first thing next morning.

We spent a whole week in Miami, most of the time trying to fix it up with the custom authorities for our failure to have the proper papers from Cuba, but were finally ready to sail for Charleston and home. It took all one morning to get clear of Biscayne Bay and the outer channel, but we finally passed Miami Light about noon. The wind was very soft all that day and night, and the next day was not much better than a calm, but the Stream was running fast, and observations showed surprising results. The second night we got a light breeze, but the next day was calm again. It is a run of 400 miles from Miami to Charleston and the noon observation that day showed that we had only covered half the distance. It remained calm until 8 bells when it started to breeze up from the south. This kept freshening all night, and the little Adventuress made good time, running dead before it. At noon the next day the skipper shot the sun and was surprised to find we were off Charleston Lightship. In other words she had made 200 miles in 24 hours and the log reading showed the Stream to be running very strong.

WAITING TO BE PASSED BY THE QUARANTINE OFFICIALS AT MIAMI.

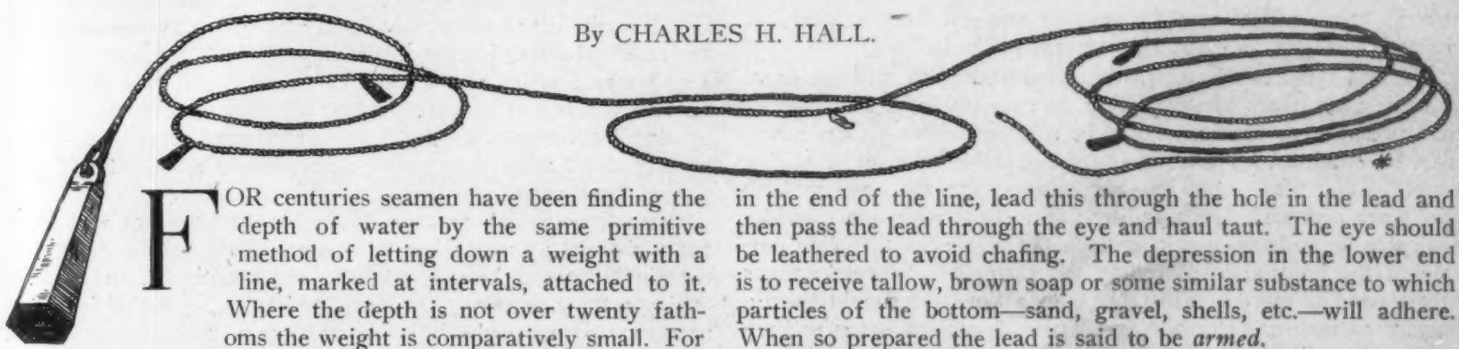
The day was hazy and we missed the lightship, running by about three miles before the course was changed inshore. This was unfortunate for it meant a dead beat back. The yacht stuck her nose into it badly and once, when she came about, the galley stove upset and started a blaze. The steward fought to put it out but could not make any headway. The skipper had presence of mind enough to haul out the kerosene reservoir tank, and it was lucky that he did for the fire was so hot it melted the zinc lining behind the stove. The steward was quite exhausted from the smoke and became the doctor's first patient on board.

This excitement was hardly over when a bad squall hit us. We doused the topsail and let her have it. The first puff was the strongest. Capt. Moot had the wheel and as he didn't wish to let her up too fast, and all her head-sails were drawing, the wind knocked her down until the small launch on the davits took in water. The rail and part of the house were under water also, and it was impossible to stand in the cockpit without hanging on to something. After we got her in the wind, the mainsail was lowered. This, however, had been too much for the Doctor, and

(Continued on page 60)

Feeling the Way With the Lead

By CHARLES H. HALL.



FOR centuries seamen have been finding the depth of water by the same primitive method of letting down a weight with a line, marked at intervals, attached to it. Where the depth is not over twenty fathoms the weight is comparatively small. For greater depths a heavier weight and stronger line are required. Only in recent years has any mechanical means been used; and we need not consider here the modern sounding-machine, nor the devices for exploring the ocean floors, for they have no place on the small yacht or motor boat, which does not go far off shore.

The hand lead today is essentially what it was two thousand years ago, when "about midnight the shipmen deemed that they drew near to some country. And they sounded and found twenty fathoms, and when they had gone a little further, they sounded again and found fifteen fathoms." Whereupon, afraid of a lee shore and being no good on a bowline they "cast out four anchors and wished for the day."

The lead itself is a casting of octagonal section with a saucer-like depression in the bottom and a hole through the top. Through this hole the line is rove, the neatest method being to splice an eye in the end of the line, lead this through the hole in the lead and then pass the lead through the eye and haul taut. The eye should be leathered to avoid chafing. The depression in the lower end is to receive tallow, brown soap or some similar substance to which particles of the bottom—sand, gravel, shells, etc.—will adhere. When so prepared the lead is said to be *armed*.

The line is usually of soft cotton, not too small in diameter, as it must be handled wet (and small lines cut the hands), nor large enough to be clumsy. It should be well stretched before marking and marked when wet. It may be stretched by winding it tightly around a tree, post, or large spar, making the ends fast and soaking it with water. When dry, take up the slack, and repeat the operation. Its length should be checked up at intervals by comparison with permanent marks, such as brass headed tacks on the club float, or along the stringpiece of a dock. The line must be *wet* when compared with the marks. The length may be measured from the bottom of the lead, but it is better to measure to the end of the line itself and let the length of the lead be that much margin. The traditional marks are as follows:

At 2 fathoms, two strips of leather.
At 3 fathoms, three strips of leather.
At 5 fathoms, a bit of *white* calico.

At 7 fathoms, a bit of red bunting.
At 10 fathoms, a piece of leather with a hole in it.
At 13 fathoms, same as at 3 (see below).
At 15 fathoms, same as at 5.
At 17 fathoms, same as at 7.
At 20 fathoms, a strand of hard cotton cord with two knots tied in it.

The above are known as *marks*, the unmarked fathoms being *deeps*. Sometimes the thirteen fathom mark is a piece of *blue* serge; this is the English of it. The marks are all small, say ¾" x 2½", but are quite distinctive as to color and material, and may be quickly identified in the dark by *feeling*.

The system of marks was developed for deep-water ships and is not entirely satisfactory for light draft vessels such as the average small yacht. For these the line may be divided in any convenient way. The traditional marks may be retained and the intermediate fathoms marked with bits of cord having appropriate knots or the divisions may be in feet. In an emergency, the depth may be obtained by sounding with an unmarked line and "fathoming it off" between the hands extended at arm's length each side of the body. Whatever scheme is used must be thoroughly learned, so that there may be no hesitation in reading soundings even on the darkest night.

The line is usually a little more than ten or twenty fathoms in length. For the ten fathom line the seven pound lead is a handy weight, though for very shallow water a lighter one will answer. For use on a fast boat in depths over eight fathoms, the fourteen pounder should be used. One authority says "commence learning to swing the lead with the seven pound one, and when you find you can swing this well, go in for the fourteen pound one, and *mind your head!*" This is sound advice and may save a hard bump. The way to learn is to practice, and keep on practicing, until accurate soundings can be got quickly on either side of the boat. One of the old-time tests of a seaman was to send him into the port chains to get a cast of the lead, where he would have to use his left hand. To quote again, "A good leadsman is not made in a day and it requires incessant practice for months to be able to heave out twelve fathoms of straight line, in the *port* channels, and get an eight fathom cast properly."

A few minutes spent with a good leadsman will be more valuable than pages of description, as example is so much better than precept. A position should be selected where a clear swing may be obtained, so this means the weather side of a sailing yacht. Then there must be some support for the body as both hands are occupied. In a sailing yacht stand with one shoulder against a shroud, or, better, outside the rigging with a line outside of the body and secured to the shrouds. A broad canvas breast band is more comfortable than a line and should have a lanyard at each end to make fast with. A canvas apron to keep the legs dry will add to one's comfort, especially in cool weather, as the drippings from the wet line soon soak through trousers and seem to run down inside of sea boots with great facility. The breast band must not be too high nor too tight.

The end of the lead line is made fast to a shroud and the line itself is coiled in the left or inboard hand, so that it will run out freely and with no chance of fouling. The leadsman faces somewhat forward and lowers the lead almost to the water, holding the line with the right or outboard hand. A little wooden toggle is often set into the line and held with the fingers; otherwise a little bight is led between two fingers and toggled with the thumb. Now the lead is swung fore and aft like a pendulum, a little further each time until it gains sufficient velocity. If the boat is moving rapidly and the water is deep it must be whirled up and over in a circle two or three times with increasing speed. At just the proper moment, as it is rising and moving ahead, the line is released and the lead flies forward and strikes the water well in advance of the leadsman's position. The line slips through the outboard hand and runs smoothly off the coil and the lead sinks down through the water to the bottom. The headway of the vessel carries the leadsman ahead and, if the cast be properly made, he is directly over the lead when it strikes bottom and the line is up and down. A quick jerk of the arm and bottom may be felt. The nearest mark to the water's edge is noted and the distance to the surface estimated. Then the depth is reported and the line hauled in and coiled ready for the next cast. If in a motor boat haul in smartly and keep the line clear of the propeller. There used to be a regular singsong chant for reporting soundings: this is obsolete but even now the reports are often "By the mark *five!*" "By the deep *eight!*", "And a half three," "A quarter less six," "Mark under water five!" and so on. The shorter and crisper way is better, "Two fathoms!" "Three and a half," "Five and a quarter." If bottom is not found, it is reported "No bottom at eight," or whatever length of line is out.

In entering a strange harbor, unless it is well buoyed and charted, the lead should be kept going, especially if beating in at night. In this case the shoaling of the water warns one when to go about. If in a strange anchorage, a few soundings around the yacht, taken from the dinghy, will show whether any hidden dangers exist into which she might swing when the tide turns. In many inlets, where the current is swift and the nature of the bottom such that it is constantly changing, the lead should be kept going. Continual sounding may look timid, but it is "better to be sure than sorry," and as for shoals, sand spits and such hidden dangers, "better a mile too far than a fathom too near." Indeed, most of the strandings that occur are due to neglect of the lead, the navigator being so sure of his position that he thought sounding unnecessary—until the vessel took the ground.

In running along a channel in a fog it is often better not to try and follow it exactly, but to cross it diagonally. Then when the soundings show that the edge of the channel is near, the helm may be put over with confidence, and the boat run on a long slant for the other side. But if in attempting to run along the center, shoal water is found, it is impossible to tell on which side deep water may lie, and a spoke or two of helm may put her on the flats. Many of us have worked our way up a shallow harbor by standing on one tack until the centreboard scraped, and then coming about amid oyster stakes have made a leg for the other side of the channel.

Sometimes it is necessary to anchor or heave to and sound out a channel in some obscure harbor. This will be done from the dinghy, noting bearings, ranges and landmarks, and possibly setting a buoy or two, to be recovered later. But this is seldom necessary on our splendidly charted coast, though it is mighty good practice for the amateur hydrographer, especially if a sketch map be plotted as explained by Commander Stanworth in a previous number of YACHTING.

So much for keeping off bottom—frequent soundings and some head-work. The lead is often a valuable instrument for finding one's position in fog. For this a single sounding is practically useless, and a series is taken at intervals, with the lead *armed*. The time, depth, character of bottom, course and patent log reading are noted for each cast of the lead. These are then corrected for the stage of the tide and plotted on a sheet of tracing paper, using the scale of the chart. A line is drawn for the course (at the proper angle with the meridian), and the point at which each cast was made marked on this line. Each sounding, reduced to mean low water, is marked on its position, with the character of bottom. A few meridians are then ruled on the paper and it is laid on the chart in the position found by the dead reckoning.

The soundings on the paper are then compared with those on the chart, and the paper shifted, keeping the meridians parallel to the printed ones, until the proper spot is found.

Any marked change in depth, such as the tail of a shoal or a narrow deep, will fix position quickly, as will a shell deposit or some such feature. It must be remembered, however, that the character of bottom shown on the chart, applies to that spot *only*, and not to the surrounding district. Unless within hearing of a clearly identified fog signal it is well to get an occasional cast as otherwise one may easily be set into shoal water. A large ocean liner grounded on the south shore of Long Island a few months ago. From the course she steered she must have been in shoal water for many miles before she finally took bottom. The weather was thick and the vessel but a few miles to the northward of her proper place, and steering the correct course for the supposed position. A cast of the lead would have revealed the danger at once and a change of course to south would have brought her to deep water in a short time.

Where the bottom has a regular slope and the water shoals gradually and evenly, the depth of water will indicate the distance off shore. Examination of the chart showing the approaches to New York reveals a slope as regular as that of a roof with the exception of the old submerged bed of the Hudson which extends seaward for miles. The depth in fathoms is roughly the distance from the beach in miles: forty fathoms, forty miles. Soundings in such depths, however, are made with the coasting or deep-sea leads, with the vessel hove-to and need not be considered here.

The Drift Lead is the heavy hand lead let down on bottom with the line made fast with plenty of slack. The lines should be secured well forward, as the bow usually ranges around the anchor less than the stern. If the anchor holds, the line will lead down or directly out to the side. If the anchor drags, the line will tend *forward*. In a warship, as there are plenty of men available, the drift lead is tended. In a yacht it is not, but if there is danger of dragging anchor or parting the cable, there will be someone on deck to keep an eye on things, including the drift lead. At night in bad weather when ranges are not visible, the drift lead will give notice of dragging. It must have plenty of slack line or it may be dragged as the vessel ranges around her anchor.

To sum up: Learn the marks on the lead line thoroughly and practice until you can get accurate soundings quickly on either side of the boat, day or night, fair weather or foul.

Compare the line with fixed marks at regular intervals. Mark and compare with the line wet. Allow for the stage of the tide when trying to fix position. Arm the lead and note time, course, patent log reading, and character of bottom. Soundings on the charts are referred to mean low water.

Don't be ashamed to get a cast of the lead when there is the least doubt as to depth of water. It is startling to see what shoal water we get into when we think we're clear of everything.

Sound frequently in thick weather, even when dead sure you're in deep water. It's good practice, anyway.

Give the drift lead plenty of slack and make it fast well forward.

Keep the lead line—and all other lines—clear of the propeller.

Don't dent the boom with the lead—go to the weather side.

Don't get too near the novice when he's learning to swing—he may extinguish a valuable yachtsman.

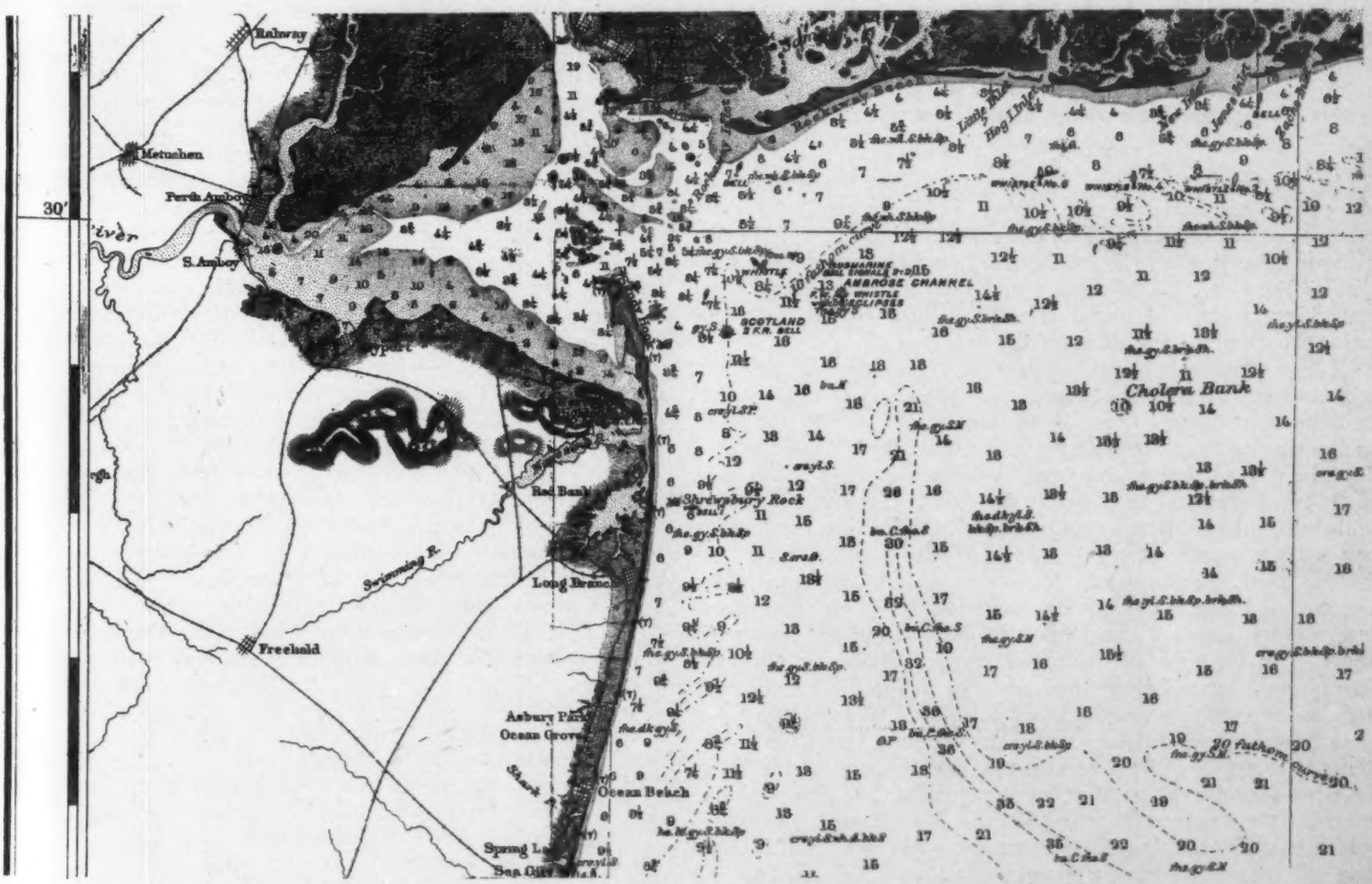


CHART OF APPROACHES TO NEW YORK HARBOR SHOWING FATHOM CURVES AND HOLE MADE BY THE OLD BED OF THE HUDSON.

Obtaining the Mean Speed of Motor Boats

MUCH discussion has taken place among yachtsmen and members of regatta committees as to the correct method of obtaining the true speed of a motor boat over a course of definite length where the trial is run in a current or tide. There are many ways of arriving at a result, most of them more or less inaccurate, but the method which is employed by the British Admiralty and generally used in this country of taking the mean of the mean speed over a number of runs, is probably the most accurate and the best. Many people do not see why taking the *average* of the number of runs does not give the same result as taking the "mean of the mean"; and others do not see why averaging the *time* is not an accurate and correct method.

As an article written by R. G. L. Markham in a recent issue of *The British Motor Boat* is such a remarkably clear and lucid explanation of the subject, and shows just how the method is worked out in actual practice, we reprint it herewith. This was the method used in determining the speed of Dixie IV in the recent speed trials at Huntington Bay, and of Maple Leaf III in the British Sea-Mile Record.

THE MEAN OF MEANS

There seem to be about 19 different ways of calculating the mean speed, and "every one of them right," according to their several exponents. The only one which all appear to agree in condemning is the Admiralty method—the one which is actually used. But perhaps this is because no one thinks it worth while to publicly champion a method which is universally accepted for official speed trials. That attitude may be sound, for, after all, the Admiralty method of the "mean of means" will continue to be used, despite its denunciators, but there are many who like full explanation and proof, if possible; and as the subject seems to be one of wide interest, I propose to refer briefly to some of the methods suggested for arriving at the mean speed.

THE EFFECT OF TIDE

In the first place, it has to be assumed that the speed trials are carried out in a tide-way. Wind will have much the same effect as a tide stream, and, in the case of high-speed, light-displacement boats, the effect of the wind may be even greater than that of the tide. In still water, and with no wind, there is no disturbing factor, and almost any old method will do for calculating the speed. I am not referring to this at all.

I have frequently heard it alleged that, provided you run both with and against it, tide can make no difference, and that it will be quite near enough, if not absolutely correct, to take the mean of the times and to calculate the speed from that. It will, therefore, be well to clearly understand what *is* the effect of the tide.

If two boys could be floated in the stream exactly a mile apart, both being free to drift with the stream, then a boat running between them would, of course, cover exactly a mile through the water. Now, assume a run down stream first, and that, at the moment of the boat passing the first buoy, both upper and lower buoys were opposite the respective observation mile-posts on shore. By the time the boat had reached the lower buoy the latter would have drifted some distance below the lower posts, and, consequently, when the observation was taken at the lower posts, the boat would have traveled something *less than a mile through the water*. Now reverse the direction, and let the buoys be again opposite the posts at the start. When the observation is taken at the upper mark, the boat will have passed the buoy—which has been drifting down to meet it—by some little distance, and will, therefore, have traveled *more than a mile through the water*. How much less or more we do not know, but we do know that the amount less and more *will not be equal*. On the down the boat has had a fair tide for less than a mile, and on t run up she has had a foul tide for more than a mile, and, o course, for a longer time than it was with her. It will not do, therefore, to average the *times* to arrive at the mean speed.

A CONCRETE CASE

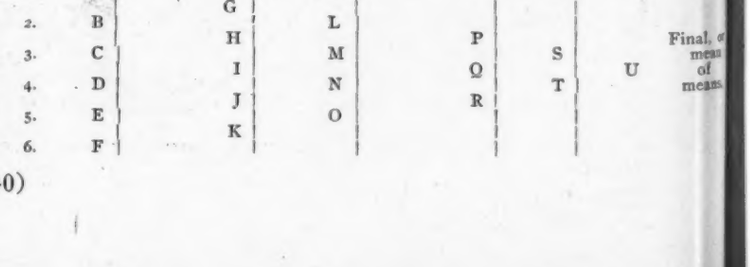
A concrete example will make this clearer. Assume a boat whose real speed is 17½ knots and a tide stream of 2½ knots. The boat runs with the stream between the posts in 3 minutes; that is, at a speed equal to the sum of her own plus that of the tide (20 knots). In that 3 minutes the boat (at 17½ knots) will have traveled only three-sixtieths of 17½ miles = 0.875 mile. That is to say that, at the moment of finishing, the floating buoy is 0.125 mile further on. In the reverse direction, the speed between the posts is that of the boat less that of the tide, or 15 knots, and the time between the posts is 4 minutes. But in 4 minutes the boat can run four-sixtieths of 17½ miles = 1.166 miles, and she will have passed the floating buoy by 0.166 mile. Looked at in a different way—the average of the two distances the boat has traveled through the water is more than a mile, and so one must not take the mean of the times and assume this as the time she would take to do a mile. The mean of the times (3½ minutes) in this instance gives a speed of 17.14 knots.

On the other hand, the length of the course has no bearing upon the *speed* (or *rate*) at which the boat covers it; assuming that the conditions, whether favorable or adverse, are constant, the *speed* will be the same, whether the length of course be one mile or ten. Consequently, the mean of the *speeds* will give a correct result—as can be seen from the above example.

THE OBJECT OF A SPEED TRIAL

The foregoing is intended for novices who have not been a to appreciate the difference between the mean of time and the mean of speed. We now come to other points which have proved stumbling-blocks to even the more expert theorists. But before passing on, it would perhaps be as well to explain why it is usual to take the mean of six runs instead of just one pair, which would be simpler, and which would probably give a more creditable result. The object of a speed trial is to ascertain the best speed which a boat can maintain for a reasonable period of time; it is *not* the idea to show what can be done in a short sprint under exceptional conditions. A steam vessel, for instance, might be able to get up and hold for 10 minutes or so an abnormal steam pressure, which she could not maintain for an hour, about the time which, when the six-run system was adopted, would be required to complete the trial. And it should be remembered that it is an essential of a trial that the runs must be taken in quick succession and without any slowing down except for turning. In the case of fast motor boats, say, over 20 knots, it is open to question whether 10 runs would not give a fairer result in relation to the result of six runs of a slow boat. However, that is outside our present discussion.

The Admiralty method of arriving at the result of a speed trial is that of the "mean of means," and may be represented as follows:—



EXPLANATORY EXAMPLES

Take the normal speed of the boat in still water as 30 knots, and let her make six runs in a tide starting at one knot and increasing by one knot for each run.

First, we will suppose that the boat increases her speed as the trial proceeds, doing runs in pairs at progressive speeds. (See Table A.) I have taken speeds which make it obvious at a glance that the true mean is 30 knots, which is also given by the mean of means but not by the "average" of the six runs.

In Table B the speed is decreasing throughout. The obvious mean is again 30. So is the mean of means, while the average remains wrong, as before.

Table A

	Actual Speed of Boat knots		Speed of Tide. knots.	Observed Speed. knots.					
1.	29	+	1	30	28.5				
2.	29	—	2	27	33.0	29.25			
3.	30	+	3	33	29.5	29.75	29.5		
4.	30	—	4	26	31.0	30.25	30.0	29.75	30.0 = Mean of means.
5.	31	+	5	36	30.5	30.75	30.5	30.25	
6.	31	—	6	25					
			6	177					

29.5 = average.

Table B

	Actual Speed of Boat knots.		Speed of Tide. knots.	Observed Speed. knots.					
1.	31	+	1	32	30.5				
2.	31	—	2	29	31.0	30.75			
3.	30	+	3	33	29.5	30.25	30.5		
4.	30	—	4	26	30.0	29.75	30.0	30.25	30.0 = Mean of means.
5.	29	+	5	34	28.5	29.25	29.5	29.75	
6.	29	—	6	23					
			6	177					

29.5 = average.

Some Carburetor Troubles and Their Remedies

By C. VON CULIN.

PROBABLY no trouble looks so puzzling to the amateur who has had but little experience with the gasolene motor, as the failure of the carburetor to work properly. The carburetor itself seems complicated to him, and the adjustments are more or less a matter of guess work. This should not be so, however, as carburetor troubles should be as easily diagnosed as those of any other part of the outfit; and one ought to be able to deal with very little experience whether or not the motor is getting the proper mixture.

When a carburetor is once properly adjusted, and has been working satisfactorily, it may be still necessary to re-adjust the needle and air valves to get the best results in different atmospheric conditions, and troubles from this cause can be remedied by a little experimenting, and with a slight adjustment of these two valves, until their proper position is found. Sometimes when the carburetor is not doing its work effectively the cause may be not with the carburetor or from an improper adjustment, yet for an emergency remedy different adjustments may be necessary and should be tried.

There are various forms of carburetor troubles, the most common ones being given below, with the remedies for each.

If an engine back-fires from too lean a mixture and is not getting enough gas, or is getting too much air for the quantity of gasolene, the trouble may not be due to improper adjustment, but may be the fault of small particles of paraffin or other sediment from the gasolene pipe or tank sticking in the needle valve. By opening this valve the particles are often sucked out and the trouble cleared up. An uneven supply of gas may be caused by water in the carburetor and may be remedied by drawing off a small quantity from the bottom of the carburetor.

When back-firing cannot be stopped by carburetor adjustment look for obstructions which may be caused by loose packing of carburetor union, or by obstructions in the gasolene pipe next to the carburetor. Disconnect the pipe from carburetor and if gasolene flows freely through it from the tank you must look for the obstruction from the union to the carburetor. It may be necessary to take the carburetor apart and clean it thoroughly. If the flow from the gasolene feed pipe is not good, and a hurry-up job is necessary, blow through the pipe to force the obstruction back into the tank. If there is no need to hurry, try to drain off the gasolene through the pipe and if possible, put a little pressure on the gasolene tank. When a fine strainer is used inside of the gasolene tank the water in the gasolene will sometimes obstruct this strainer, preventing the gasolene from flowing freely into the feed pipe. When an engine slows down and back-fires, or slows down and speeds up again it is indication of an obstruction in the gasolene supply, which, however, may be caused from lack of vent in the top of the gasolene tank, which can be ascertained by removing the cap in the tank temporarily.

Too rich a mixture is manifest when the engine runs unevenly at low speed, shows black smoke or forms a carbon deposit rapidly on the spark plug. To determine if more air is required for better results, place your hand in front of the air intake of the carburetor, varying the distance from it, note the results and adjust the air spring accordingly.

Flooding of a carburetor may be caused by a sodden float, or one that is too heavy, or a leaky float if it is made of metal. If a cork float, the remedy is to dry it out and apply a coat of shellac, if metal, to solder the leak. Flooding may also be caused by obstructions in the float valve of carburetor. To remedy this move the tickler up and down a number of times with the finger, very quickly.

In using a chamois to strain the gasolene before putting into the tank always wet the chamois first with gasolene; for if water touches the chamois first any that may be in the gasolene will not be filtered but will pass through with it.

If a leak is found around the intake gasket, remove the flange and put on a new gasket. If a carburetor has not been giving good results from the start, look carefully at the adjustments to see if they have been made according to the requirements of that particular make of engine, instructions for which usually are furnished with the engine. Before readjusting the carburetor see that ignition system is in good condition and properly adjusted, that all terminals are tight, that batteries are not run down, that a good flow of gasolene is supplied to the carburetor and (in a 4-cycle) that the valves are correctly timed, the seats tight and working freely.

If the engine does not fire regularly, open the compression cocks to find which cylinders are missing. The trouble may be too much cylinder oil, water in the gasolene or too much gasolene

and the cause may be determined by the nature of the discharge from the compression cocks. By keeping the cocks open a short time the trouble may be relieved temporarily. Then you can adjust your oil or gas as the discharge indicates or perhaps drain a little water from the bottom of the carburetor in case the trouble is there. Possibly the plugs may need cleaning.

If after priming cylinders the engine does not start it is an indication that the cylinders are flooded, providing the ignition is all right. If it does fire after priming, but will not run, the indications are that it is not getting enough gas. When engine is flooded it will not back-fire.

For running on low speed the needle valve should be opened a little more, and when speeding up the needle valve must be closed a little, cutting down the amount of gas. It is well to try to find the best position of the needle valve for starting and also for high speed, and to mark both positions so that they can be found subsequently. Of course, it will be necessary to change these adjustments at times according to local conditions of atmosphere and the weather in order always to get the best results.

Skipping of the cylinders may be caused by the valves being pitted; by leaks around the spark plugs or piston rings; dirty spark plugs; defective vibrator; loose terminals, or faulty timer. In case of this trouble do not always blame the carburetor and get it out of adjustment before you have examined the various parts and tested them for other troubles.

Sometimes poor results are caused by using too small a carburetor. It is a well known fact that some makes of carburetors give better results on certain makes of engines than others. It is presumed that all reliable manufacturers supply the size and style of carburetor which they have found gives the best results on their engines; but this is no reason why there may not be in some cases other makes of carburetors better suited for a particular type of engine. In all cases of carburetor trouble, however, the locating of the trouble is the first thing to do. When the cause is found the remedy is as easy as rolling off a log.

Decision of the Protest in the Manhasset Bay Cup Race

Photo by F. A. Walter.

JOYANT (AT LEFT), CORINTHIAN, WINDWARD.

During the series of races for the Manhasset Bay Challenge Cup sailed last July, the entire yacht racing world of the East was much exercised over the protests concerning the ability of most of the yachts to measure into the class, owing to a somewhat ambiguous clause in the Universal Rule relating to the points at which certain measurements were to be taken. At the time the committee in charge decided to let the boats race subject to remeasurement after the race and decision on the protest.

The committee in charge of the race consisted of Charles Lane Poor, Aemelius Jarvis and James D. Sparkman. This committee has now finished its work and made its report to the regatta committee of the American Yacht Club. In their decision they sustain the protests against Joyant and Corinthian and declare Cara Mia the winner of the Cup.

The following is a full text of the report:

H. deB. Parsons, Esq., November 14, 1911.
Chairman, Regatta Committee,
American Yacht Club.

Dear Sir:

The Committee, appointed in accordance with the Declaration of Trust, governing the Manhasset Bay Challenge Cup, submits the following report on the races held during July, 1911:

1. Challenges, in proper form, were received from seven yacht clubs. These challenges were accepted by the American Yacht Club, and the Challenging clubs duly nominated the following yachts as their respective representatives:

	Club	Yacht Selected	Rating
(1)	Seawanhaka-Corinthian	Corinthian	30.80
(2)	Corinthian (Marblehead)	Amoret	30.93
(3)	Portland	Sayonara	30.99
(4)	Eastern	Timandra	30.97
(5)	Boston	Italia	30.95
(6)	Indian Harbor	Joyant	30.89
(7)	Larchmont	Windward	30.80

The American Yacht Club defending the Cup, selected Cara Mia, rating 30.97

The challenging and defending yachts complied with all the formal preliminary requirements and were, therefore, apparently entitled to compete for the Cup.

2. Previous to the start of the first race a protest, involving the eligibility of Joyant, was received by the Committee. Similar protests were also received against Windward, Cara Mia and Corinthian.

After consultation with the owners, or their representatives, of the various yachts, the Committee decided to allow the protested yachts to sail the series of races under protest and subject to a remeasurement of the water-line and quarter-beam lengths, such measurement to be made strictly in accord with Rule 2, Section 2, Paragraph 4.

After the conclusion of the series, protests were received involving the same points of measurement against Amoret, Sayonara and Timandra.

3. The races were held on July 10th, 11th and 12th. Joyant won the series under protest, the points earned by each boat being as follows: Joyant, 23; Corinthian, 20; Cara Mia, 17; Sayonara, 13; Windward, 11; Timandra, 11; Italia, 8; Amoret, 4.

4. *Disqualifications.*

In the Second Race, the Committee, without a protest, disqualified Amoret for fouling Timandra at the first mark of the course.

Yachts Italia, Timandra, Corinthian, and Windward failed to comply with Article VI. of the Declaration of Trust, in not filing with the Committee within twenty-four hours of the completion of the last day's race, a Crew Certificate. These yachts are, therefore, automatically disqualified for the entire series.

5. *Protests.*

The paragraph in the Measurement Rule under which the various protests were filed reads as follows:

"In case there are any notches, jogs, curves, or angles, at or near the plane of measurement of either the load water-line or quarter-beam length, they shall be taken to a fair line bridging such notches, curves, jogs, or angles."

The intent of the rule is to prevent the shortening of the water-line or quarter-beam by the use of notches, jogs, or curves. The use of the word "curve" apparently widens the scope of the rule and extends the portions of the boat to which it applies, for while notches or jogs are purely local in character, a curve is more extended. Any device of designing by which the measured water-line or quarter-beam does not give a true measure of the length of the boat is, by this rule, penalized.

The Measurer took, from the hulls of the yachts Corinthian, Joyant, and Cara Mia, their profile lines, and secured from the designers certified copies of the profile lines of the other protested boats. These profile lines, with certain explanatory data, were submitted to the Committee.

The protested yachts Joyant and Corinthian are from thirty (30) to fifty (50) per cent. larger than the other boats of the class. The Joyant's water-line length is 35½ feet as against 32½ feet of the Cara Mia, her displacement 559 cubic feet as against 325. This large size is made possible on a small rating by the use of hollow lines at or near the planes of measurement. These lines do not show any notches or jogs in the ordinary acceptance of such words, but do show hollow curves. The water-line as measured to the surface formed by the hollow curves does not represent the real length of the boat and under a broad interpretation of the rule such curves should be penalized.

The Committee is of the opinion that yachts Corinthian and Joyant contain lines which the spirit of the rule distinctly penalizes. The penalty provided is "Bridging," but the rule does not provide any distinct method of bridging and the application of the rule to any specific case is extremely difficult and liable to cause honest differences of opinion.

The jurisdiction of the Committee over the entire subject of the protests has been questioned. The claim has been made that in all questions of measurement the decision of the Measurer is final and that the Committee has no authority to issue instructions as to how the rule shall be interpreted, or to investigate the methods and data used by the Measurer in reaching his decision.

To this view the Committee dissents. The Committee believes that the clear intent of the Rules is to make the Measurer's report final only so far as the contestants are concerned; that it is the duty of the Committee, before deciding a protest, to assure itself that the Measurer's report is made in accordance with the Racing Rules and is based upon measurements prescribed by the Rules; that the Committee has the right to require the Measurer to submit evidence that the measurements called for have been made in accordance with the rules made and adopted for his and its guidance.

The Committee finds and rules:

First. That the Committee has jurisdiction and the right to assure itself that the measurements have been made in accordance with the Rules.

Second. That the protests against Joyant and Corinthian are sustained.

That the protests against Windward, Cara Mia, Timandra, Amoret and Sayonara are not sustained.

6. *Conclusion.*

As to the entire match the Committee rules and finds:

That the match be and is hereby declared won by Cara Mia, of the American Yacht Club.

Respectfully submitted,
(Signed) Chas. Lane Poor.
(Signed) Aemilius Jarvis.

New York, November 16, 1911.

Mr. H. deB. Parsons,
22 William St., City.

Dear Sir:

I regret that I do not find it possible to concur in the report of the majority of the Manhasset Club Cup Committee for the following reasons:

1. I believe that Joyant and Corinthian measure fairly under the rule.

2. I also believe that it is the duty of the Committee to adhere strictly to the letter of the rule and that an opinion as to what the spirit or intent may be under a "broad interpretation" is not within their province.

3. I believe that the Measurer has done his full duty and measured the boats according to the rule.

4. The Committee therefore has no option but to accept the certificates of measurement issued by him, and as he certifies that Joyant measures fairly within the class limit, she should, in my opinion, be declared the winner of the match.

Respectfully submitted,
(Signed) James D. Sparkman.

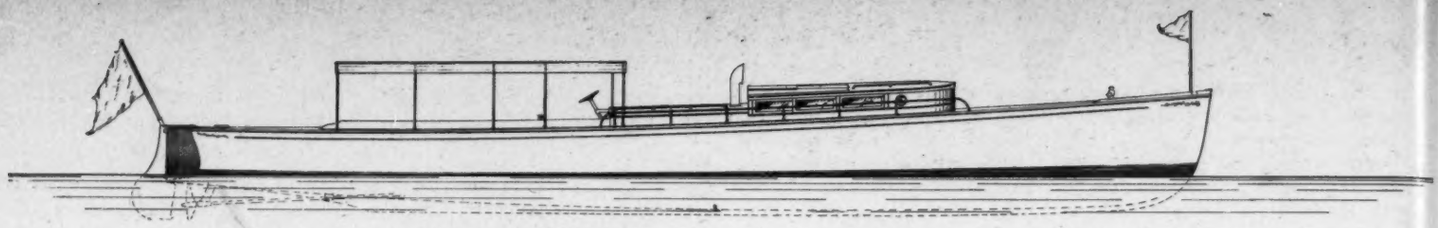
In commenting upon this decision it may be remarked at the outset that it came as a surprise to most of the interested parties and to yachtsmen generally. Under the circumstances, a decision allowing this particular race to stand as sailed was generally looked for, with a recommendation that at the earliest possible moment the ambiguous clause which caused the trouble be cleared up by the yacht clubs and associations using the present measurement rules. Such a decision would have seemed in keeping with a broad spirit of sportsmanship, inasmuch as the owners of all the new boats which competed had built in good faith and under what the designers thought was correct interpretation of the rules. The challenges and measurements were accepted in good faith, and while the original protest came from the Boston boats and was probably drawn up by George Owen, the naval architect, it was very carefully worded and the intent of the protest was probably to get a ruling on the clause in question for future guidance rather than with the idea of throwing out any particular boat in this match.

The committee calls attention to the fact that its jurisdiction over the entire subject of measurement and its authority to issue instructions or to investigate the methods used by the measurer in reaching his decision have been questioned. In this matter, however, I believe that the committee was within its rights in satisfying itself that the measurements were taken in accordance with the rules and ordering remeasurements to satisfy themselves that the measurers' work was correctly done.

The other question of jurisdiction, however, that of interpreting the broad intent of the rule in question is not so clear; and where the intent of a certain clause seems to differ from the meaning conveyed by the wording, it hardly seems the province of any individual committee to determine what the intent may be, but to rule according to the letter, and let the proper body define the intent or clear up the ambiguous portion of the rule.

The result of this decision, however, makes it imperative that steps be taken *at as early a date as possible* for another conference of the yacht clubs and associations that drafted the present rule to take up this matter and clear the existing doubt. Until this clause is made explicit, there will be practically no building under the present rule. This end, however, could have been brought about without the disqualification of the two boats in question, and the same results been obtained by allowing the race under discussion to have stood as sailed with the recommendation that steps be taken at once to clear up the cause of trouble.

This is not meant as a criticism of the committee that made this decision, for it was composed of particularly able men who were evidently influenced by what they consider the larger good of the sport; though even so, the committee were not united in their decision, a minority report being written by Mr. James D. Sparkman, which is published with the majority report.



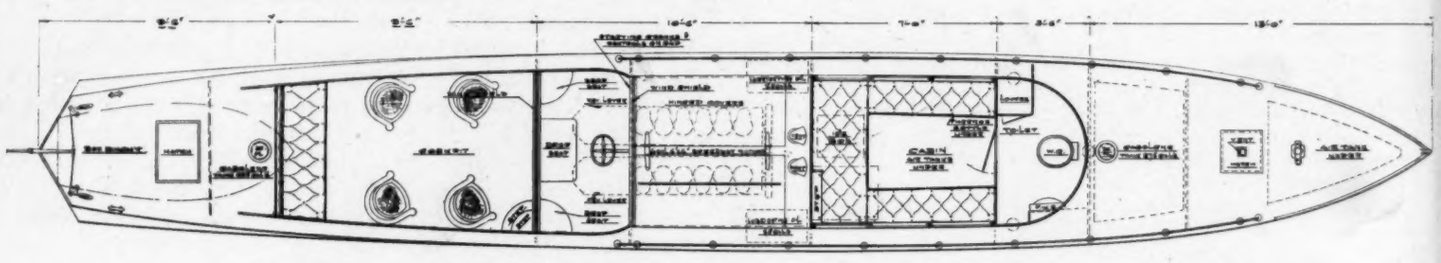
A 53-Foot High Speed Cruiser for Day Service

A RATHER unusual type of boat has recently been designed and is now under construction by the Gas Engine & Power Co., and Chas. L. Seabury Co., Consolidated, of Morris Heights, New York City, for Mr. John C. King. This craft was designed for service in Maine waters, where a high speed motor boat was desired for the rough water conditions that are apt to be met in that locality, and she has many distinctive features. She is 53 feet long over all with a beam of 7 feet 2 inches. The hull will be planked entirely with mahogany, while all trim will be of the same material.

It will be seen that there is a cabin at the forward end of the boat with a trunk cabin house, for use in bad weather, while aft there is a large cockpit with easy chairs and a lazy-back seat, and also a smaller cockpit for the steersman.

The engines consist of two 6-cylinder, 4-cycle, 6 x 6 inch Speedway motors with aluminum base, and are located amidships under a hinged hatch. This is a much better position for the weights than having the engines forward, as is the case in many of the high speed boats of this type.

The forward cabin is well arranged and very comfortable for day use, and contains a toilet room, ice box, etc. The boat will be capable of a speed of 23 to 24 miles per hour, this speed being guaranteed. The builder's guarantee also calls for a sustained speed of 20 miles per hour on a run from New York to Poughkeepsie and return, a distance of 140 miles, with six persons on board. The boat is arranged entirely for one man control.



A 16-Foot Water Line One Design Class

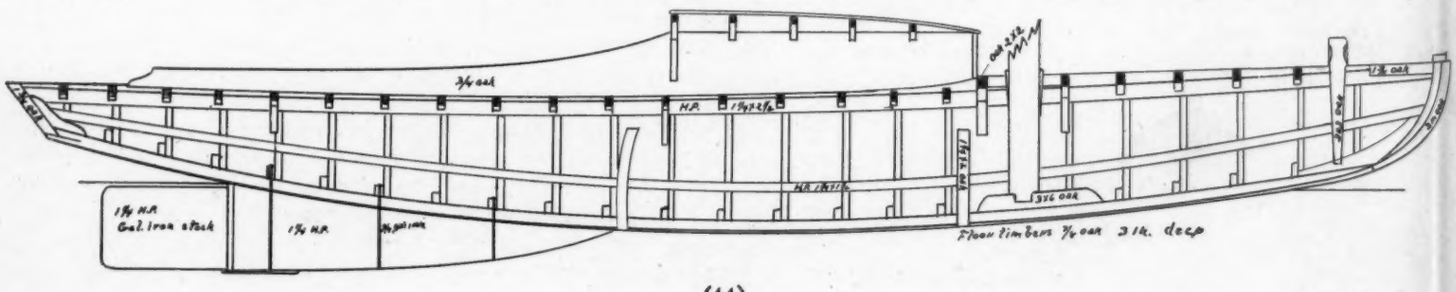
WITH the growth in popularity of one-design sailing classes for boats of the smaller size, the plans shown herewith will be interesting, especially to those who are contemplating such a class for use in shoal waters. These plans are from the board of R. J. Lane, and are for a small one-design class for a club desiring a boat of this size that could be built at small expense.

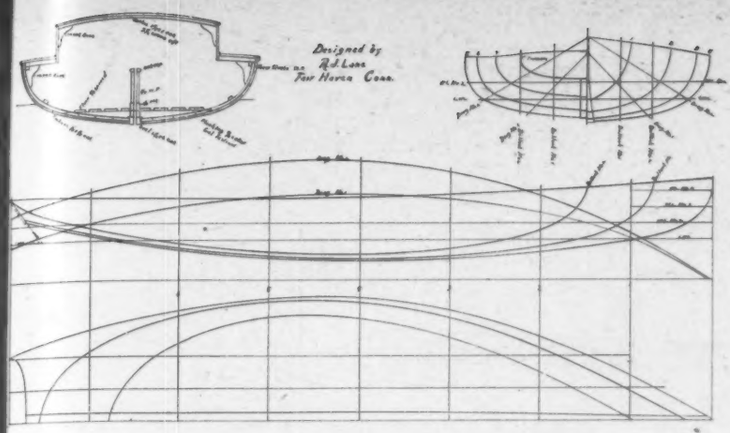
A center-board boat was necessary, on account of the shoal water, and 16 feet was used as a basis for water line length. The general dimensions of the craft are: Length over all 21 feet 6 inches, length on water line 16 feet; beam extreme 7 feet 6 inches and draft to bottom of skeg 1 foot 3 inches, with a total sail area of 282 square feet. The boats rate about 17 feet. These dimensions give a roomy little boat with a good turn of speed and stiff and able for its size.

The lines show a full boat with very moderate overhangs, hard bilges and good bearing surfaces. Over the forward end of the cockpit is a small cabin house forming a cuddy in which to keep sails, etc. This still leaves an open cockpit of over 6 feet in length.

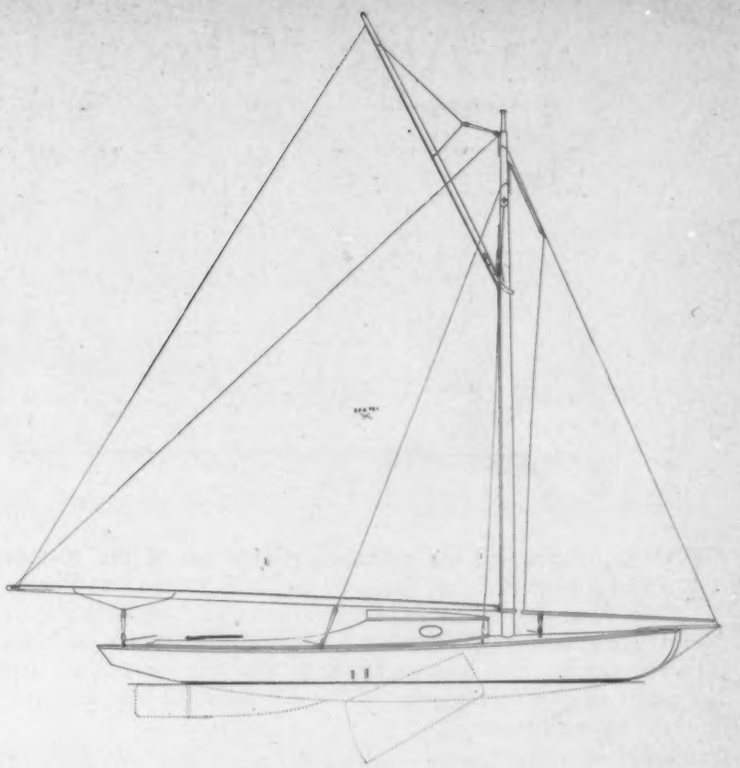
The specifications call for a well built boat with oak timbers, 5/8-inch cedar planking, galvanized fastened, oak stem and stern posts and 1¼ x 1½-inch yellow pine bilge stringers. The deck is 5/8-inch spruce, canvas covered. A 1¼-inch hard pine skeg is bolted under the keel aft of the center board, while the rudder is of the same material with galvanized iron stock. The sail plan is moderate and the boat should be very easy to handle and fairly stiff. All deck fittings, rigging, turnbuckles, etc., will be of the best.

A boat of this type can be built for a few hundred dollars, and where several are turned out at the same time very advantageous figures can be obtained. It makes an excellent small boat for day sailing or for a racing one-design class, and with half a dozen in a club, lots of fun could be had with weekly races during the season. They are inexpensive to keep up, and make a good craft for youngsters to begin in.





While designed primarily for a racing class, these boats are sufficiently large to use for general sailing and will hold four or five persons without crowding; and around sheltered harbors or on shallow bays, such as Great South, or Barnegat bays, they make a very handy type. They are designed to sail without ballast, other than the crew, and have good beam and large bearing surfaces, making for stability. They are also well tied together.



A 25-Foot Runabout With Good Speed for the Power

THE plans of the little 25-foot runabout which we publish herewith are of a boat that is being built by the Bayonne Launch Co., of Bayonne, New Jersey, for use in New York and adjacent waters. She is a particularly clean-lined little boat, that should be driven easily on very moderate power, and is of a type that has proved very useful for running around harbors, lakes and sheltered waters.

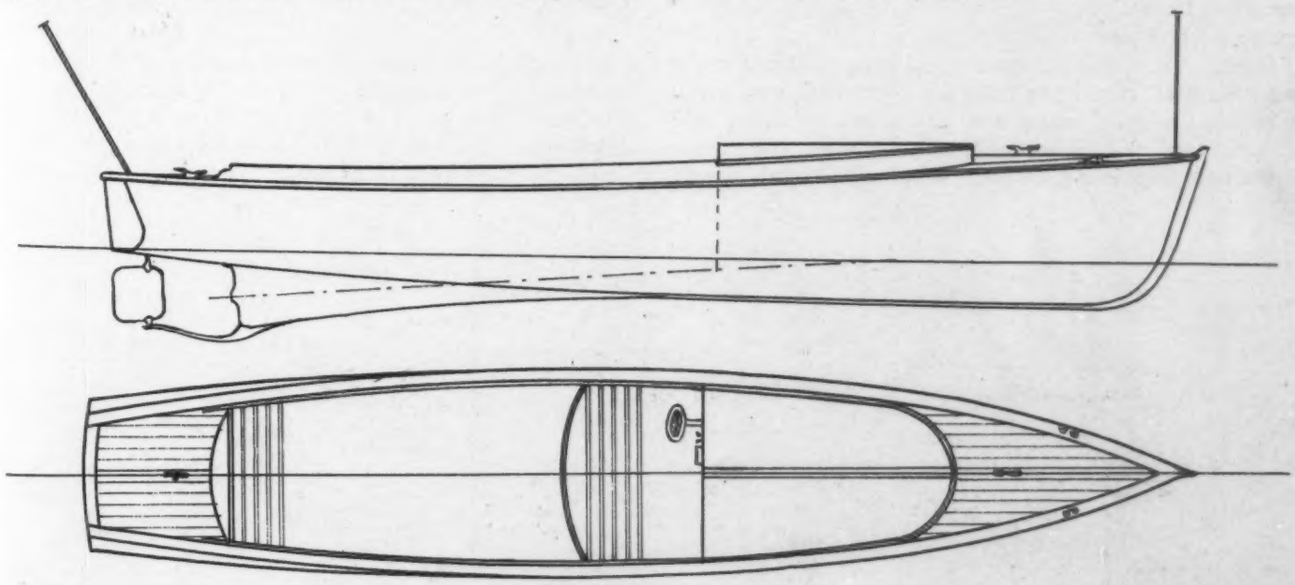
The principal dimensions are: length overall, 25 feet; extreme beam, 5 feet; draft to bottom of skeg, 2 feet.

She will be equipped with a 12-horsepower 2-cylinder, two-cycle Eagle engine, turning up 700 revolutions per minute, which will give an estimated speed of 12 miles per hour.

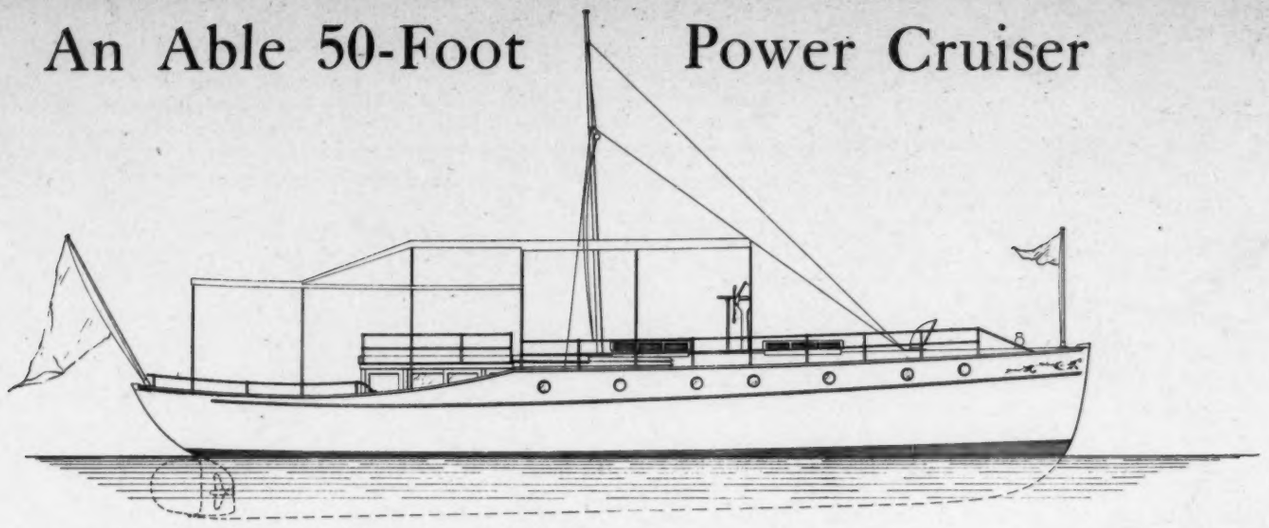
The boat is well laid out, the engine being in the forward part of the cockpit under a hinged hatch or hood, with a bulkhead at the after end. There is a steersman's seat athwartships, and just aft of the bulkhead which carries steering gear and engine control. Aft of this seat is a large open cockpit with plenty of room for wicker chairs and with an athwarthship lazy-back seat at the after end.

The deck forward is 5 feet long and the after deck 3 feet in length, laid in narrow strips of mahogany. The construction of the boat will be the best throughout. The frame, as usual, will be of oak, the planking of 5/8-inch cedar and deck planking, coamings, etc., of mahogany. All fittings will be of brass or bronze, with a bronze rudder.

The boat has an easy entrance with a rather flat floor and an easy run, while there is considerable tumble-home to the after sections. The stem is slightly raking and the stern is of the transom type. She was designed for the Bayonne Launch Co., by M. W. Whitaker, of New York.



An Able 50-Foot Power Cruiser



THE plans which we publish herewith are of the 50-foot motor boat Halcyon, designed and built by the Gas Engine & Power and Charles L. Seabury Co., Consolidated, of Morris Heights, New York City for Mr. T. M. Russell of Middletown, Conn. She is a particularly able, roomy cruiser and has given an excellent account of herself since she was launched in 1910, having logged 14,000 miles in two seasons, while last year she won the cruising race from Middletown, Conn., to Huntington, Long Island.

The principal dimensions are: Length over all 50 feet, length on waterline 45 feet 2 inches, beam 11 feet and draft 3 feet. The boat is of the raised deck type with short extension trunk aft over the stateroom. As there is no break in the raised deck for the steering bridge, full head room is obtained throughout below decks.

HALCYON, AN UNUSUALLY ROOMY 50-FOOTER.

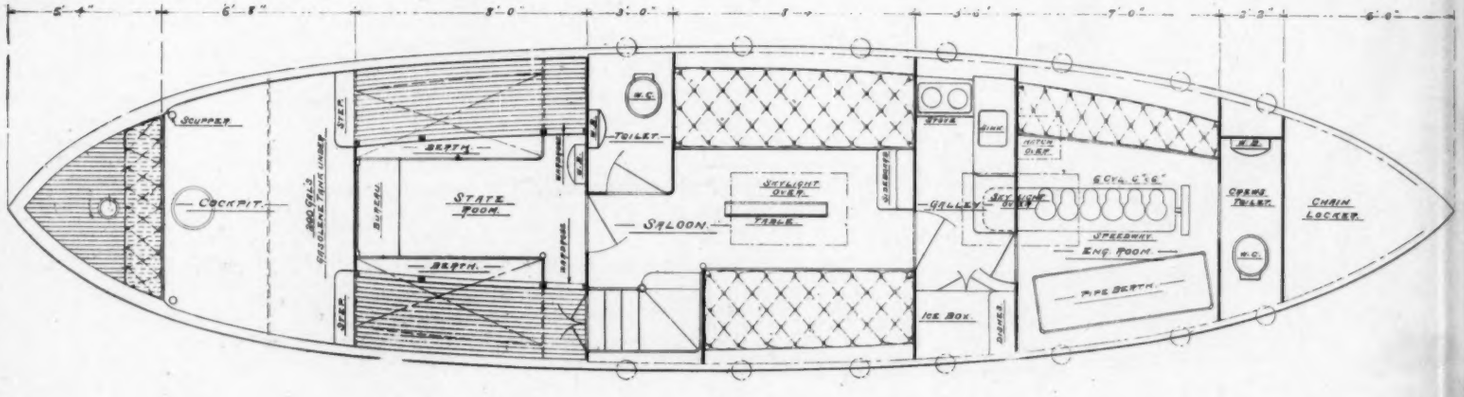
The engine room is located forward and contains a transom, pipe berth and the crew's toilet. Aft of this is a good sized galley extending the full width of the boat, containing large ice chest, sink, stove, etc. Following this is the main saloon with a transom on either side and buffet, sideboard and dining table. In the after end of the saloon, on the port side, is a good sized toilet room, while on the starboard side is the companionway to the deck. Still further aft is a stateroom with two full-sized built-in berths, bureau, wash basin, etc. The after deck has a shallow cockpit 6 feet 8 inches long with a lazy-back seat at the after end.

The power consists of a 6-cylinder, 6 x 6 inch Speedway engine giving the boat a speed of 12 miles an hour. The gasolene tanks are aft under the cockpit floor and have a capacity of 200 gallons. The boat is built to the usual high Seabury standard of construction.

The steering gear, engine control, etc., are located just forward of amidship on top of the raised deck, under an awning on stanchions which runs aft over the cockpit.

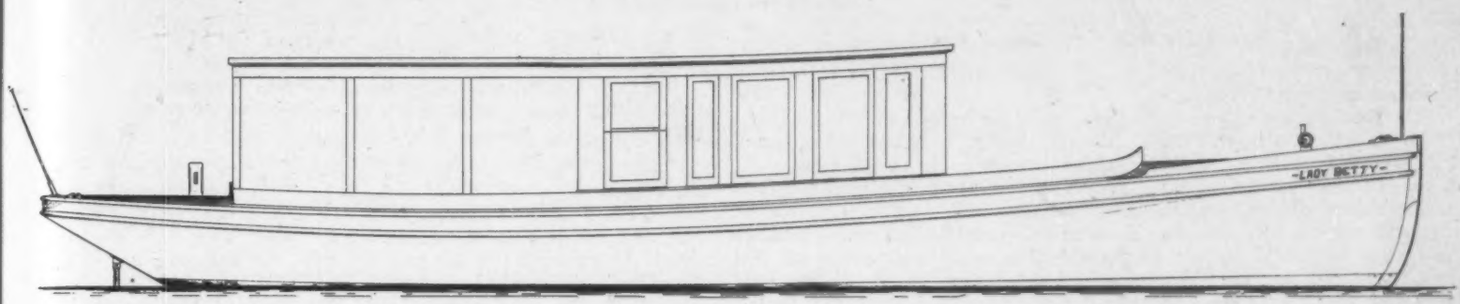
There is an extra wide deck on either side of the extension cabin trunk over the stateroom, the companionway being at the forward end of this deck on the starboard side.

Having the raised deck extend across the boat without the usual break between it and the after cabin trunk for the steering bridge, adds much to the roominess of the craft both below and on deck. It does away with the waste space under such a bridge, gives full head room throughout below, and a large sweep of deck room above. The only disadvantage to such



an arrangement is that the helmsman has but little protection, though in summer weather this makes but little difference. The photograph shows a canvas wind shield or weather cloth to overcome this drawback.

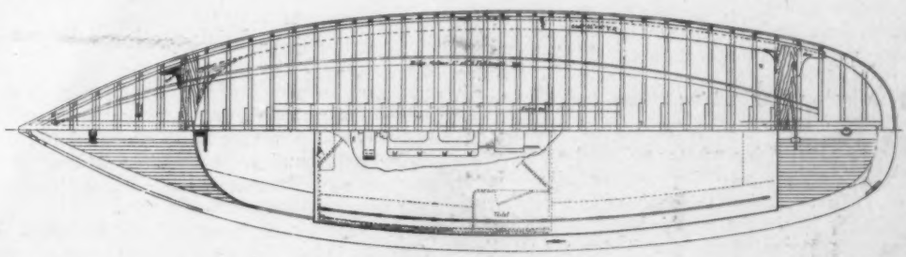
Good ventilation is had below by numerous port lights in the sides of raised deck and by ample skylights, while the stateroom has large square windows along the sides of the trunk cabin.



A 40-Foot Launch and Yacht Tender

THE accompanying plans of a heavy, 40-foot power launch are from the board of Mr. H. E. Dantzebecher, N. A. of Philadelphia, Pa., and were made for Mr. John P. Crozer, of Chester, Pa., who will use the boat as a tender for his sailing yacht Marchioness, and for fishing purposes on Delaware River and Bay, and along the Atlantic Coast.

The boat is 40 feet long by 11 feet beam, and 3 feet 6 inches draught, and will have a 35-H. P. 4-cylinder Globe engine installed.

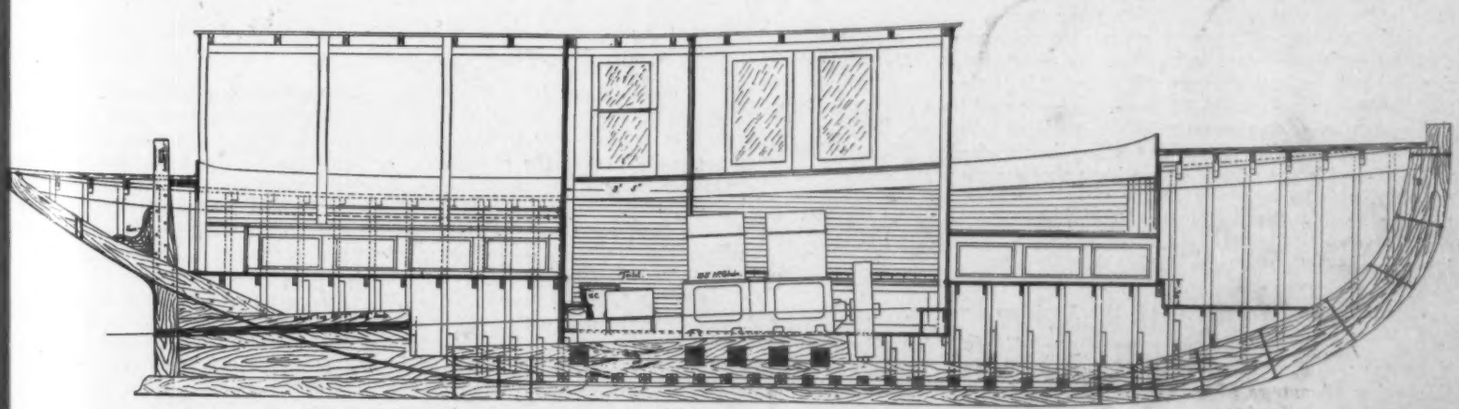


The hull is of very heavy construction, with copper and bronze fastenings throughout, and everything about her will be of the highest class. The cabin will be finished in oak, natural finish, with decks of the same material. The planking will be cedar 1¼ inches in thickness. The launch has a short, glass-sided cabin amidships housing the engine, and containing a toilet room with Sands water closet, wash basin, etc. Aft of the cabin is a large roomy cockpit capable of holding a good sized party, there being transom seats around the sides and across the after end. This cockpit is protected by a permanent roof, extending aft from the cabin roof on wooden stanchions. She is admirably adapted for the purpose for which she is intended and should prove a very able, comfortable and useful boat. She is now being built at Atlantic City, New Jersey.

There are four copper gasolene tanks with a total capacity of 375 gallons. These will go under the lockers, two forward and two aft. There is also a good sized towing bitt in the afterdeck.

There is also an open cockpit forward of the cabin for the steersman, with transom seats on either side. Both of these cockpits are above the water line, are sealed and drain overboard. There is a good-sized stowage space under the forward deck. The boat has good lines for one of her beam, with a rounded stem cut away somewhat at the forefoot, and a fantail stern, giving a wide after deck.

In designing a boat for a yacht tender it is wise to turn out a boat heavy enough and with sufficient power to tow the sailing yacht whenever necessary, and one strong enough to stand a lot of knocking about.



Mess Room Talk

IN this Department we will gladly answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered and when of sufficient interest, question and answer will be printed in this department for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Write legibly on one side of the paper and give your name and full address.

Power for a 22-Foot Speed Boat.

Muskoka, Can., Dec. 1, 1911.

Information Dept., Yachting.

On the lake here there are several gasolene boats which make from 10 to 12 miles an hour. One boat, a 28-footer, 4 feet 6 inches beam, equipped with 10-H. P. 3-cylinder engine goes probably 13 miles per hour. I would like to get a boat about 22-24 feet to carry 4 or 5 persons safely and which would go, say, 16 or 17 miles an hour with one passenger. Perhaps you will give me some ideas, as to power, design, etc. There are two good hull builders here so probably I would install an engine if I had them build for me. Where could I get design for boat? For speed do you advise 2 or 3 blade propellers. W. B. J.

In order to obtain the speed desired by you from a 22-24-foot boat, the hull would need to be of very light material and equipped with a comparatively high-powered motor. The lines should be fine, and I would recommend the use of the "V-transom" stern. For a boat of this length to attain this speed, it will be necessary to keep the beam within certain limits—less than 4 feet 6 inches at the most. The narrower the beam the greater will be the speed with the same power, other things being equal, but of course too narrow a beam will reduce the stability and capacity of the craft. If designed with sufficiently fine lines and made of light material, a 12 to 15-horsepower high-speed motor should give a speed of 17 miles an hour to this boat.

As to a naval architect who would be able to furnish reliable designs for the local boat builder, we would refer you to any of the designers whose advertisements appear on the page devoted to this class of advertising in this issue.

Except for the very smallest boats, a three-bladed propeller is superior for all purposes to one with but two blades. Practically all medium sized speed boats are equipped with three-bladed propellers. Among other things there is less vibration from a three than from a two-bladed wheel.

Cause of Missing Explosions.

Our engine, a 3-cylinder, 2 cycle, 10-H. P. is giving us trouble in missing explosions. We are using 6 cells with a master coil and a magneto. Boat will run a mile without missing, then miss for another mile. Hard to start engine at times even after priming. We have an auxiliary air valve on each cylinder. What is likely the trouble?—(1) Too much air; (2) Too much gasolene; (3) Loose rings in cylinders; (4) Exhaust; (5) Oil?

Engine in use 2 seasons. If this is not asking too much, I shall be obliged for a reply. J. T. K., Gravenhurst, Ont.

It is rather difficult to locate the trouble with your motor without being "on the ground" to observe the nature of the missing. If the missing occurs at various times in all cylinders, and it is certain that the batteries are sufficiently strong, I would suggest that the trouble might lie with the action of the master vibrator, the platinum points of which might need cleaning or resetting. This might be the seat of the trouble, even though the missing were confined to but one of the cylinders. Water in the gasolene would cause the various cylinders to miss intermittently, and might also make trouble in starting.

If the missing is confined entirely to one cylinder, and it is certain that the ignition system is in good condition, the trouble might well be due to stuck or broken rings. Whether this is the case or not, however, may be discovered easily by turning the motor by hand and observing the comparative compression in the various cylinders. If there is the same resistance offered to the turning in the faulty cylinder that there will be found in the others, it is evident that the rings are doing their work properly. If the motor is of the three-port type, it is possible that the packing around the crank case leaks or that the babbit of the crank shaft bearing has become worn and allows an escape of the charge as it is compressed in the base.

Waterproofing the Ignition System.

Norfolk, Va., Dec. 3, 1911.

YACHTING:

Taking advantage of your courtesy in offering to answer questions, I propound the following:

(1) Which is the best way to waterproof (or best system for waterproofing), ignition in an open, small launch?

(2) There is a mode of steering a launch by means of a lever at one side. Can you give me diagram, or instructions for rigging this steering gear? H. W. S.

The best way to waterproof an ignition system is to keep all exposed parts under cover. The coil and batteries *must* be protected from dampness, and if there is no seat or locker available in which these may be placed, a rubber-covered box should be used. The spark plug terminals should be covered, but this may be done easily by the use of a rubber "stocking" designed for the purpose, which may be fitted down over both the wire terminal and the exposed portion of the plug. The insulation of good, high-tension wire should be waterproof in itself, but an extra precaution should be taken by applying a coat of shellac to all parts that are exposed to the rain or spray.

There is on the market a reliable waterproof ignition system where the coil and plug are made integral, and covered with a waterproof case. This devise has been used in open boats in rough weather with good success, and can be recommended.

In answer to your second question, it is obvious that the plain, side lever will stretch the tiller cable whenever the former is moved to either side of the vertical position. The use of a quadrant, however, preserves a uniform tension on the rope, chain, or cable, and, next to the side steering wheel, is the most satisfactory method of 'midship control. A regular quadrant can be bought for this purpose and placed perpendicularly along the inside of the boat, under the cockpit coaming with the tiller rope leading over it. A lever handle can be fastened to this quadrant for ease in operation.

Diagnosing a Balky Engine.

Sacramento, Cal.

I am the proud (?) owner of a 16-foot motor boat with a 3-5-H. P. L——— 2-cycle engine. Last summer, when I put her in the water I had a common mixing valve on her, but she refused to go. I tore engine down and found a cracked piston ring. I then got a new one but still no success. Examined the mixing valve and I decided that the valve seat was no good.

A Schebler carburetor was the next thing in line. While in the shop she finally came out of her grouch enough to run.

She was then towed down to the river and I stepped into her and expectantly gave her a twist, fully expecting the sharp rattle of her exhaust, but no such luck.

All that day I cranked, primed, flooded and drew out the gasolene. At last she started to go.

She went "dandy" all that evening but the next morning it was again no go, until I had cranked big blisters on my hands.

When she would condescend to go, she would stop as suddenly and unexpectedly as she had started.

This kept up for the best part of two weeks and at the end of that time I was compelled to come down from the country and she is now stored up in our garage.

I have driven an auto for three years so you see that I ought to know something about a gas engine. L. W. B.

It is rather difficult to answer your questions with the symptoms you give. It is necessary to know just how the motor stopped, as I could then tell whether it was from too much or too little gasolene. If the trouble lies in the carburetor, as seems to be the case, and the motor stops with decreasing power, it would seem that the mixture was too rich and that the engine was flooded. If base explosions occurred, there was not enough gasolene supplied through the needle valve. A Schebler carburetor, such as you attached to the motor, must be adjudged at fine for both air and gasolene, and if the butterfly nut regulating the automatic air intake valve is not set right, no adjustment of the gasolene needle valve can make the motor run properly. It is a rather ticklish operation and no amount of previous experience with a 4-cycle motor can help much in the adjustment of the carburetor of the 2-cycle type.

The trouble may very possibly lie in the ignition system, and I should advise you to go over the vibrator of your coil thoroughly and make

ertain that it does not stick and that the contact points are not pitted. Under such conditions, a motor will sometimes run perfectly for hours t a time, and will then suddenly stop for no apparent cause. If tested, he spark coil will give the necessary buzz, and yet when the motor is tarted again, it may stick. If you are sure you have adjudged your arburetor properly, I should feel pretty certain the touble lay in the ibrator of your coil, for these small marine motors are not always quipped with the best make of spark coils.

Changing the Propeller Pitch.

Mittineague, Mass., Dec. 4, 1911.

The writer has on his boat a three blade propellor 20 inches in diameter nd 26 inches pitch. I only get from the engine about 360 revolutions, nd to develop the power it ought to have about 500. I understand that ne can twist the blades a little to take out the pitch. I would like to now if this is a practical thing to do, and if so can you give me any lea as to how much they ought to be twisted.

I imagine this is a rather ticklish sort of a job, still, with a little care ought to be accomplished without much difficulty.

If you could advise me about this by return mail it would be greatly ppreciated. C. W. D.

As you suggest, it is a rather "ticklish sort of job" to change the pitch f a propeller correctly, but I believe that, with care, you will be able o do it satisfactorily after a few trials. It is impossible to state just how uch the wheel should be twisted in order to obtain the desired speed of he motor, as this depends upon the general shape and width of the lades, but it is better to be conservative and bend but a few degrees at time. I have found that an ordinary heavy wooden bench vise serves o hold the wheel well, as the pressure of this does not bend the blades ut of shape as would an iron one. If an iron vise must be used, it ould be well to place wooden pieces between the jaws against which the lade may rest.

The wheel should be held in the vise by one blade so that the top of he vise will grip about half way between the end of the blade and the ub of the wheel. This distance should be measured so that each blade ill be held at exactly the same depth in the vise and the twisting will ccur at the same part of each blade. With the wheel held in place by s blade, an iron rod should be slipped through the hub to be used as a ver for twisting. For a first trial I would not recommend a change of ore than eight or ten degrees in the angularity of each blade. When he first blade has been twisted, some mark should be made along the ench under the rod before it is removed. This mark will serve to show he position of the rod when the twisting was completed and can be sed as a guide by which the other two blades may be twisted the same mount. In order to obtain good results from a propeller, each blade hould have the same amount of pitch, and consequently this equal twist an important consideration.

A Rear Starting Device.

Ithaca, N. Y., Nov. 23, 1911.

I have a 25-ft. motor boat with a 3-cylinder, 15-horsepower Barber en- ne installed. The engine is installed between a bulkhead and the rward end of the cockpit. I want to find some sort of a starting evice that will be practicable and not dangerous. I enclose you here- ith a stamped envelope and would ask that you favor me with any dvice on the subject you may have.

Thanking you in advance, I remain, H. S.

The usual form of starter for a motor located in a forward compart- ent where the fly-wheel cannot be reached consists of a rod held, in rackets, parallel with the motor so that a sprocket can be attached to its forward end that will engage, through the medium of a chain, with a larger sprocket attached to the corresponding end of the motor crank shaft. The other end of the rod projects through the bulkhead and to it may be attached the usual form of starting crank, which will become disengaged as soon as the motor is started. This device is not dangerous if the spark is always sufficiently retarded at starting.

If desired, however, a special safety ratchet may be obtained at almost any automobile accessory dealer's, and this may be attached to the end of the rod with which the crank engages. There are a number of excellent rear starting devices on the market, which can be bought, ready to fit to motor.

Lubrication Through Fuel Supply.

Cedarhurst, L. I., Dec. 6, 1911.

Information, Yachting:

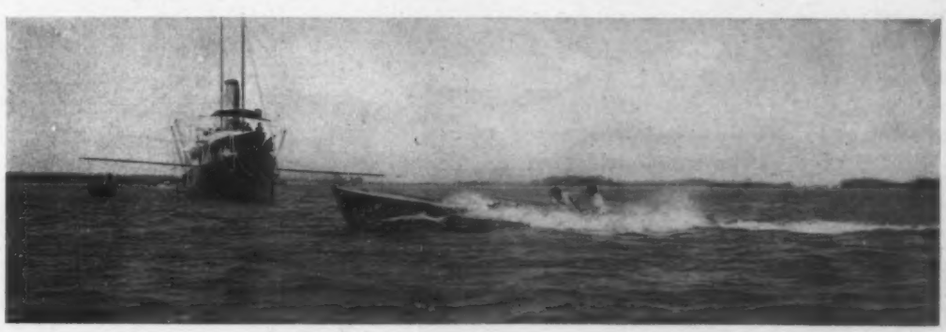
Would you kindly advise me if mixing oil with the gasolene will work with any engine, and if using oil that way, would you still have to use your oil cups at any time, and what quantity of oil should be used with five gallons of gasolene.

I have a 2½-H.P. Racine engine which will not start with a carburetor, and I am just using a vaporizer; it runs all right but I have difficulty in starting it, especially after a run of a few miles; could you state the trouble in starting.

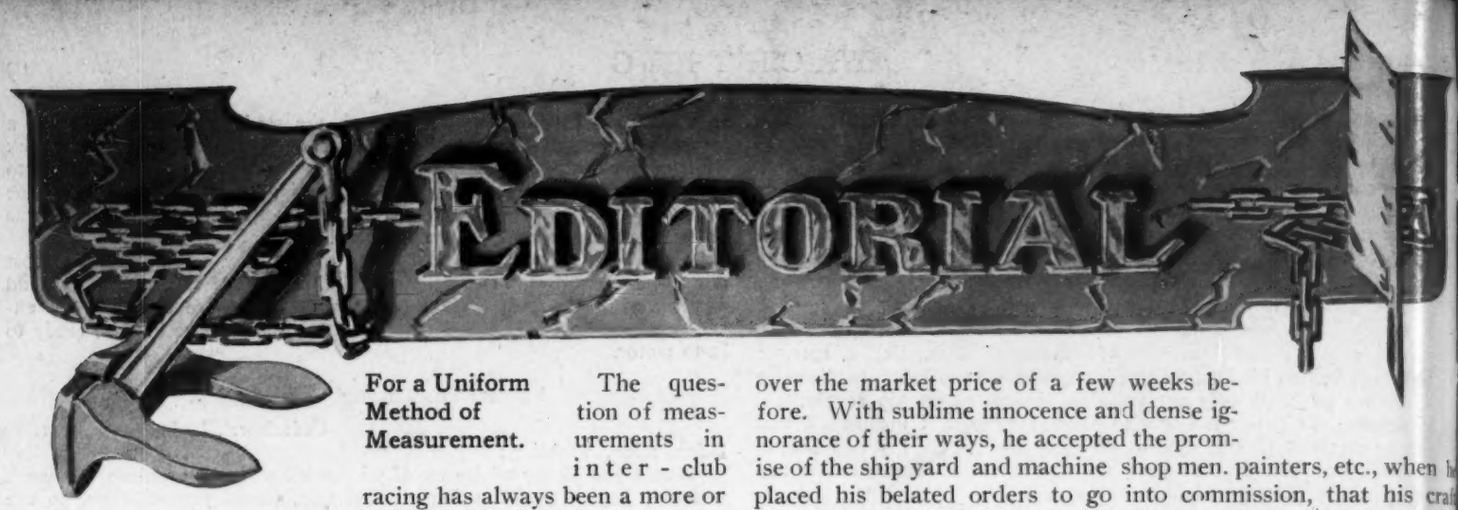
Any information in regard to the above will be very highly appreciated by me. R. D. B.

In reply to your inquiry, I would say that the practice of mixing the lubricating oil with the fuel of a gasolene engine has been used a great deal with more or less success. Personally I prefer to introduce the oil into the intake manifold from an oil cup, as it will then be carried by the charge to all cylinders and parts of the pistons and connecting rods. In general the oil may be mixed with the fuel for two-cycle motors, but it has not been successfully done in the case of those of the four-cycle type. If the motor is of the three-port, two-cycle type, taking its charge into the base before being forced into the cylinder, the conditions are best adapted for this form of lubrication. When oil is used in the gasolene tank, the oil cups that lead to the cylinder walls will not be needed, but the base should be provided with a sufficient quantity to allow the crank shaft end of the connection rod to dip a slight amount into the lubricant if the motor is of the two-port type. In the three-port type, the oil mixed with the gasolene enters the crank case where part of the lubricant is thrown on the connecting rod and wrist pin bearings, and these parts are thus cared for. The "dope" cups, or other lubricators attached to the crank shaft bearings should not be dispensed with, however. A pint of oil to every five gallons of fuel is the usual amount used in this method of lubricating. It is better that the oil should be mixed thoroughly with the fuel before the tank is filled. I would advise you to read the article on this subject in the November issue of YACHTING.

It should be possible to use a carburetor on any gasolene engine that will run under any other conditions. It is possible that the reason your engine will not operate with a carburetor is that you have not provided a check valve in the inlet pipe. This check valve is necessary when a carburetor is used with a two-port, two-cycle motor, but is not needed if the motor is of the three-port type. Your trouble in starting with the vaporizer might be due to water in the gasolene, but it is more likely that it is on account of the mixture adjustment. With a vaporizer, a much richer mixture is required for starting than will be needed after the motor is once in operation, and it is possible that you neglect to open the needle valve sufficiently at this time. A gasolene of low specific gravity would also make starting difficult.



THE BIG AND THE LITTLE OF IT. SPEED BOAT RACING ON CHESAPEAKE BAY.



For a Uniform Method of Measurement. The question of measurements in inter-club racing has always been a more or less vexed one, and a movement is under way among the members of Massachusetts Bay yacht clubs looking towards the appointment of one measurer to do the work of all the clubs in the Association, to the end that such measurements may be uniform. As it is now, each club usually elects its own measurer, and any other club will accept this measurer's certificate on the rating of a boat, except in the case of a protest, when most regatta committees have the power to order remeasurement and to satisfy themselves that the measurements were made in accordance with the rule; although just how much power a regatta committee has in this respect is often a matter of discussion, as is witnessed by the present trouble over the Manhasset Bay Cup. This system has many faults, and while in a large organization a competent measurer is usually to be found, in some of the smaller clubs there is a chance of measurers being elected who have but little knowledge of measurement rules or formulæ and are hardly competent to do the work. Under these circumstances it would seem to be a wise move on the part of the various racing associations to appoint some recognized measurer for the use of such clubs as do not care to have their own measurers, and to whom all disputes as to rating measurements might be referred, as a sort of court of last appeal.

The Corinthian Yacht Club of Marblehead has already passed a motion recommending that hereafter measurers of clubs shall be appointed by the executive committee of the Inter-Club Yacht Racing Association, and it is expected that the Eastern and the Boston Yacht Club will take a like stand in the near future, as for some time there has been a feeling in these clubs that the office of measurer should not be an elective one but should be by appointment. Under this method two or three, or possibly only one man, might have the measuring of boats that race in that Association, and the chance of a measurement dispute would be greatly lessened. The idea has many points recommending it and will bear further thought.

A Fable. There was once a man with a hankering for life afloat, and a fondness for fancy yachting clothes, who had had so many good times aboard of some other fellow's boat, and had helped that other fellow deplete his "booze" locker with such keen enjoyment that he at last decided that he was a born sailor and must have a real yacht (or motor boat) of his own on which to play host. Arriving at this decision at the close of a summer's fun, he spent the ensuing winter inviting his friends to become members of his crew, or to come for week-end sails the following season.

But he was a procrastinating dog, and in his usual slothful way he put off the purchase of his craft until the sticking of winter flannels and the hints of the invit*ees* warned him to get busy; with the result that he made a hurried choice of a craft that he found later didn't meet his requirements, and paid about 25% over the market price of a few weeks before. With sublime innocence and dense ignorance of their ways, he accepted the promise of the ship yard and machine shop men. painters, etc., when he placed his belated orders to go into commission, that his craft would be ready to go overboard the opening day of the season.

But the scraper showed that the paint had to be burned off or the engine man declared the engine needed new piston rings and the opening day came and went with the other fellows sliding overboard while his boat still reposed peacefully in the yard. Another two weeks gone—nothing doing! At last she goes overboard amid great rejoicing and popping of corks. Now to show them what a real yachter is like! But, unfortunately, the plumbing had not been overhauled, or the stuffing box hadn't been repacked and the water was over the floor of the boat, or the rats had gotten at the sails and they were not fit to bend, or—another of the numerous trials to which a boat owner is heir.

Finally, after six weeks of sailing weather had gone, and after much free expression of feeling in true nautical language by the owner and a fixed impression that every one who has any business connection with the boat or engine is a cross between a liar and a crook, the boat was ready for her first sail.

The moral of this tale is apparent, and yet it applies not only to the novice buying his first boat, but to 90 per cent. of the seasoned boat owners as well. Everything is put off until the last moment, when the owner expects his job to be put through in rush time at the season of the year when yards and shops are overcrowded with work and when any kind of labor procurable is taken on, with the result that the work not only costs more but is not as well done and is sure not to be finished on time. It is just as easy if you are going to buy a boat to buy it before the spring rush commences, when the brokers can give you proper attention; and it is just as easy to place your orders for overhauling of the boat and engine, or the making of new sails, far enough ahead to give the people doing the work time to do it properly. It is usually up to the owner whether or not a satisfactory job is done and whether he gets a long and successful season.

Our Boston Show Number. Probably no one thing during the year creates as much interest among motor boat men and boat users generally in New England as the Annual Motor Boat Show held at Mechanics Building during the early winter. Not only does it give the boat enthusiast a chance to study carefully and comprehensively the improvements in boat and engine design for the coming year, but it gives the manufacturers a chance to come in direct contact with the buyers in a way that is afforded at no other time. This exchange of ideas between maker and user is of distinct value to both.

Our next issue—the February number—will be the annual Boston Show Number, devoted largely to the interests of the show. In it we will have a complete list of the exhibitors with a comprehensive description of their product and the new features which they may embody. This will be of such value that this portion of the magazine will be a permanent guide to boat users.

Spar Varnish

MARINE use makes all varnishes (except Valspar) look sick. Water turns them white and that's a sign of deterioration. The varnish that turns white has perished. The next time, it turns white more easily, and after a few wettings there is no varnish left. A varnish that turns white has no right to call itself a "marine varnish" or "spar varnish" at all!

VALENTINE'S
VALSPAR
"The Varnish That Won't Turn White"

Valspar is the first waterproof varnish ever produced. It will actually withstand continuous immersion in water, salt or fresh, without deterioration.

On the sides of swift motor boats like the Champion Dixie IV, Valspar stands the spray and water friction perfectly.

On Thomas Fleming Day's Sea Bird, it withstood the trans-atlantic trip and was "still on deck" at Gibraltar.

On yachts and dinghys it holds its own all summer long without renewal.

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We have embodied all the news about this marvellous new development in varnish making, in the new Valspar booklet. We will gladly send it free on request. We are ready also to include a sample of Valspar for the enlightenment of skeptics so that they may put it in water for themselves and try in vain to make it turn white. See also our public test at all Boat Shows.

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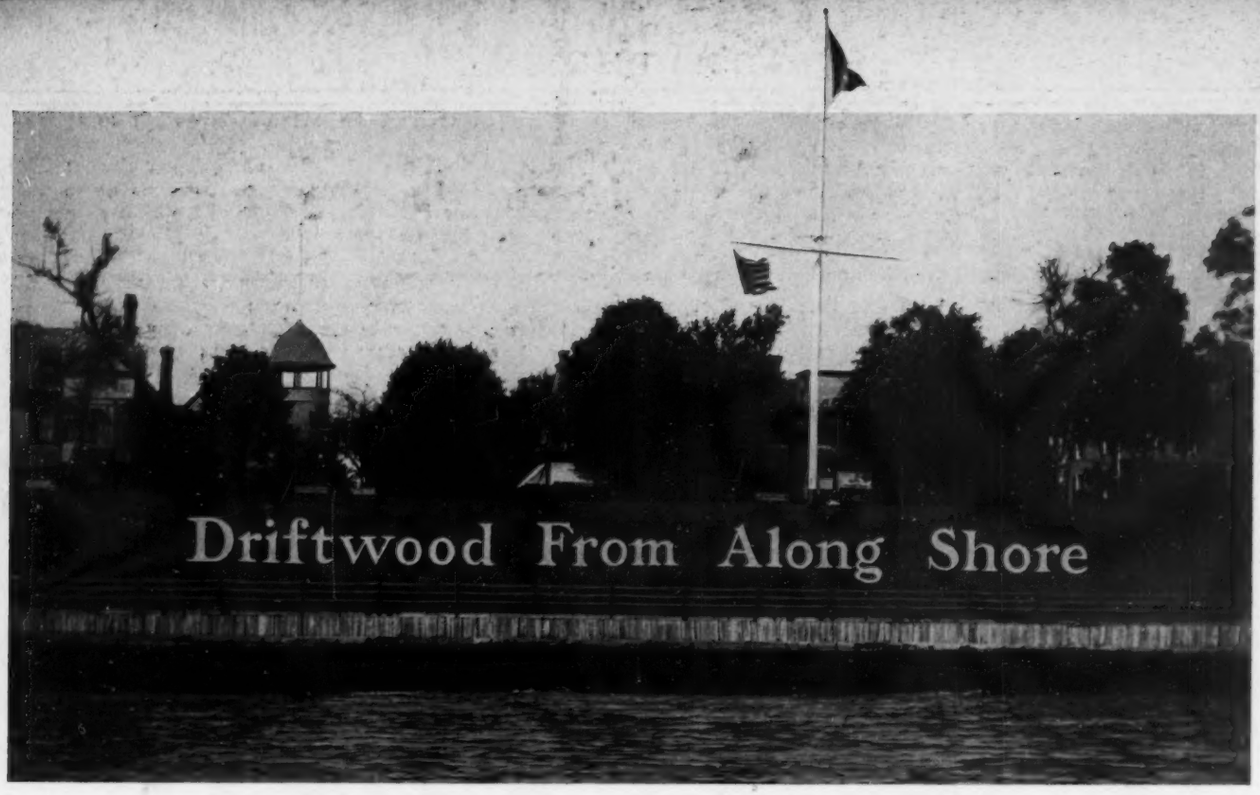

Annual Meeting of the Inter-Lake Yachting Association

Commodore W. R. Huntington of the Sandusky Yacht Club was unanimously elected Commodore of the Inter-Lake Yachting Association at the annual meeting, held in Cleveland, December 2nd. Commodore Huntington is one of Lake Erie's veteran yachtsmen and previously served the Association as Commodore in 1901. The other officers elected were: Rollin M. Starr, Maumee River Y. C., Vice-Commodore A. J. Prentice, Lakewood Y. C., Rear-Commodore, Harry W. Card, Lakewood Y. C., sail yacht measurer, Charles W. Kelley, Lakewood Y. C., power boat measurer, Dr. P. E. Betherd, Toledo Y. C., fleet surgeon.

Vice-Commodore Starr was promoted from the office of Rear-Commodore, which he held last year on account of his efficient work for the association in 1911.

A report of the committees brought up a discussion with reference to power-boat rules, following a report by A. Y. Gowen, chairman of last year's regatta committee. Mr. Gowen recommended that races for speed boats at Put-in-Bay be eliminated owing to the fact that these boats have not attended the regattas in the past and have not shown an interest, in spite of the committee's effort to have them attend. This opinion was concurred in by Otto Nehrenst, in his report as chairman of the Power Boat Rules Committee, who further recommended that the races next year in the power-boat line be restricted to cruisers and open boats.

The question of the Yacht Racing union establishing a set of restrictions for power-boat cruisers, which came up at the meeting a year ago, was reported upon by Com. Richardson, who stated that the Y. R. U. was not willing to undertake the making of rules for power boats, and suggested that it be put up to the Great Lakes Power Boat League.

Com. Geo. Worthington of the Cleveland Yacht Club, who will take charge of the Inter-Lake in 1913, spoke of the big celebration to be held at Put-in-Bay at that time as a memorial to Commodore Perry and his celebrated victory. Several thousand dollars will be available for yacht and power-boat racing, and the list of prizes promises to be the most attractive ever put up in this country.

Illinois Valley Yacht Club

The annual meeting and election of officers of the Illinois Valley Yacht Club was held in Peoria, Ill., Monday, November 13. Robert G. Scholes, formerly vice-commodore, was unanimously elected to the commodoreship to succeed A. T. Griffith; H. E. Chubbuck was moved up from rear to vice-commodore, while W. E. Persons was elected to the former office. F. H. Gift succeeds himself as treasurer and Wm. R. Bootz, formerly chairman of the house committee was elected secretary in place of Guy C. Goodfellow. The following directors were elected: S. L. Nelson; Jas. R. Fuller; E. H. Bradley; A. T. Griffith; J. M. Baillie; L. H. Lord; A. D. Campbell; W. B. Wilde and J. P. Brady.

The annual report of the treasurer showed $500.00 cash on hand with all bills paid, including those of the 1911 regatta of the Western Power Boat Association.

Recent Yacht Transfers

The following is a list of recent sales and charters of power yachts effected by the firm of Cox and Stevens. This list is an indication of the continued activity in vessels of this type which, in view of the disturbed state of the financial market, is worthy of note:

The 83-ft. cruising power yacht MILWIN sold for George W. Quintard, 3rd, to a prominent yachtsman of New Orleans.

The 60-ft. cruising power yacht RAMONA II sold for F. C. Lozano of New York to a member of the New York Yacht Club.

The 60-ft. gasolene cruiser MAJOR sold for Francis E. Thompson of Boston to Michael J. Tierney, New Rochelle, N. Y.

The 60-ft. motor yacht SIMPLICITY sold for John R. Corbin of New York to Arthur H. Waterman.

The 46-ft. gasolene cruiser GLORIOSA sold for George B. Spearin of New York to Stephen J. Leonard, New Rochelle, N. Y. She has been re-named JEANCHEN.

The 53-ft. gasolene cruiser UNOME II sold for Dutee W. Flint, Providence, R. I., to C. H. Foster, Troy, N. Y.

The 50-ft. raised deck cruiser DORIS B II, sold for Jacob C. Benz, Lynn, Mass., to Mr. W. G. Case, Buffalo, N. Y.

The 50-ft. gasolene cruiser JEANCHEN sold for S. J. Leonard, New Rochelle, N. Y., to W. T. Bradley for use on Lake Champlain.

The 50-ft. raised deck cruiser BECKEYE sold for George Wack, New York, to T. M. Brumby, Marietta, Ga.

The 30-ft. auxiliary yawl WILD GOOSE sold for Lawrence Dunham, New Rochelle, N. Y., to Harold C. Nye of Cleveland to which city she has been shipped.

The 60-ft. motor yacht PATRICIA chartered for Charles W. Lee, New York to Mrs. J. J. Harrington, Larchmont, N. Y.

The 85-ft. twin screw gasolene house boat Onawa II chartered for Wilbur C. Fisk, New York, to a member of the New York Yacht Club for cruising in Florida waters.

Formation of A National Merchant Marine Association

An association having for its object the upbuilding of the American Merchant Marine was recently organized at a meeting held in New York, and incorporation papers are now being filed for it. At this meeting the following officers were elected, most of them well known in the marine supply trade, or identified with the shipping interests:

President, John H. Hanan; secretary, Jas. L. Ewell; treasurer, Chas. D. Durkee.

Directors—Chas. F. Wiebusch, J. A. Coffin, John E. Fisher, Geo. W. Gittins, Geo. R. Burrows, Harry C. Louderbaugh, Andrew J. Mc Intosh, Fred A. Wurzbach, E. C. Bennett.

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SPLITDORF IGNITION has demonstrated its merits in every field calling for a constant, juicy spark. Just investigate. It matters not whether it is a speed boat or a "Kicker"—a racing or pleasure automobile, a motorcycle, an aeroplane, a motor truck or an agricultural motor—SPLITDORF IGNITION is the ideal ignition and ALWAYS THERE WITH THE GOODS.

Make a point, too, to investigate SPLITDORF "GEM" TYPE MARINE COILS. Both price and performance, with true quality guaranteed, will surprise you. They are built in covered oak boxes, PROTECTING ALL PARTS. They are of the highest grade with interchangeable units and are economical on batteries. Single cylinder at $6—also made for two, three and four cylinder.

Our SERVICE DEPARTMENT is at your disposal so make a point of it TO-DAY to WRITE FOR INFORMATION.

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The full objects of the association are set forth in the following resolution:

Resolved: That we in meeting assembled, form a National Merchant Marine Association to promote, encourage, restore and advance the supremacy of the flag of the United States of America upon the merchant shipping of the world, and to provide proper inducements, encouragement and protection to users and owners of vessels built in our country; to promote American commercial interests throughout the world and to encourage, aid, assist, and pursue all proper methods for the establishment and maintenance of an American Merchant Marine, and to reform abuses and acts detrimental to the same; to promote and better export trade relations; to promote and encourage the development and maintenance of suitable waterways and terminal and dock facilities for the passage, reception and handling of vessels; to take active part in formulating laws effecting the aforesaid objects and to secure favorable legislation therefor; to provide lectures, addresses, meetings, conferences and literature for furthering the objects of the Association; to secure the aid of the Congress of the United States of America, State Legislatures, boards of trade, chambers of commerce, industrial organizations, civic bodies, individuals and other channels for the advancement and accomplishment of the objects of the Association; and to do any and all things for the good and welfare of the Association and its members, and the carrying out of the objects herein and hereby contemplated, not contrary to law.

New Officers of the Great Lakes Power Boat League

The second annual meeting of the Great Lakes Power Boat League was held at Detroit M. B. C. clubhouse, Saturday evening, Nov. 11, 1911. The retiring Commodore, W. E. Scripps, presided. A duck dinner to delegates preceded meeting. Delegates present: H. D. Elliott, B. L. C.; Geo. T. Bliss, Erie Y. C.; P. C. Jones, M. R. Y. C.; Geo. Dietz, C. P. C.; R. E. Power, L. Y. C.; E. H. Croft, L. B. C.; H. S. Greening, R. H. Y. C.; Geo. W. Graves, D. M. B. C.

Officers elected for 1912: C. H. O. Pook, R. H. Y. C. Commodore; P. C. Jones, M. R. Y. C., vice-commodore; A. Y. Gowen, L. Y. C., rear-commodore; W. F. McGiverin, R. H. Y. C.; sec'y-treas., Guy Judd, R. H. Y. C., measurer; Jos. G. Murphy, R. H. Y. C., fleet captain.

Atlantic Yacht Club Elects New Officers

The annual meeting of the Atlantic Yacht Club was held on the evening of Dec. 11, at the Waldorf-Astoria for the election of officers and the transaction of other business.

The following were elected for 1912: For commodore, J. Stuart Blackton; for vice-commodore, Willard U. Taylor; for rear-commodore, Arthur W. Teele; for trustees, Charles B. Ludwig, William H. Barnard, J. W. Copmann; for secretary, Edward I. Graff; for treasurer, P. H. Hart; for membership committee, Charles B. Ludwig (chairman), Herbert L. Jones, Kenneth Lord; for nominating committee, yacht owners, Francis M. Wilson, George P. Dillenback, W. Hunt Hall, and non-yacht owners, Charles N. Lindley (chairman), Max Grunder, Walter H. Sykes, Jr. The annual dinner of the club will be held in January, the date to be announced later.

Work of the Water Way League

In the absence of President George J. Vestner, who is ill, the meeting in the Johnston Building, Dec. 3rd, of the Water Way League of Greater New York and Long Island was presided over by First Vice-President Acker. It was the first gathering since the summer days and many topics of interest were discussed.

Although much influence was brought to bear upon the Government officials, by wealthy residents of Long Island, to have lights placed on Cuban Ledge and No Name Rock, two large rocks in Long Island Sound, nothing was accomplished until the Water Way men took hold of the matter. It was reported that after four months' work their committee had succeeded in having the lights installed.

Hereafter, each yacht club of the League will fly the League flag, with the club burgee, in accordance with the motion unanimously adopted last night.

Officers of the Motor Boat Club of America for 1912

The annual meeting and election of officers of the Motor Boat Club of America was held Nov. 15, at half-past eight o'clock in the club rooms, in the club house of the Automobile Club of America. The Committee on Nominations recommended the re-election of Commodore Henry H. Melville; Vice-Commodore Frederick K. Burnham; Rear-Commodore J. Stuart Blackton; Charles Francis, treasurer, and F. N. Morley, secretary. These were elected together with the following Board of Trustees, to serve for the ensuing year:

Albert E. Smith, Captain John M. Shaw, Frank J. Gould, Henry R. Sutphen, August Heckscher, Morris M. Whitaker, Thomas F. Chesebrough, Samuel Cochrane, George McKesson Brown and W. H. Barnard.

Bayside Yacht Club Elects Officers

Mr. G. Waldo Smith was re-elected Commodore of the Bayside Yacht Club for the tenth time at the anuual meeting held Nov. 11, in their club house on Little Neck Bay. Other officers elected were rear-commodore, Elmer G. Story; vice-commodore, Edwin Shuttleworth; secretary, William H. Johns; treasurer, Eaton V. Reed; members of the Board of Governors, T. Rumney and Harvey G. Rockwell. The club's annual dinner will be held in Manhattan on January 20.

Organization of the Ambrose Channel Yacht Club

At a meeting of yachtsmen held at the Imperial Hotel, New York, November 1, there was organized the Ambrose Channel Yacht Club, with a membership of nearly fifty. The Club has secured a lease of the pier and club house belonging to the Shields estate at the foot of Bay 22d Street, Bath Beach, Brooklyn, N. Y., for a term of years from May 1 next.

The officers elected for the season 1912 are: commodore, Sherman P. Camp; vice-commodore, M. Fagans; rear-commodore, Richard Flegel; fleet captain, E. Steffens; recording and corresponding secretary, Geo. D. Wayre; financial secretary, Jas. C. Woodruff; treasurer, John Nulty; trustees, Arthur Barlow, Chas. F. Brown and Enest Flegel; Chaiman of House Committee, Elmer Wollin.

New Officers for Hampton Roads Y. C.

B. F. Mitchell was elected Commodore of the Hampton Roads Yacht Club to succeed Commodore R. A. Dodson, who declined re-election, at the annual meeting of the club held Dec. 5. Dr. H. B. Webster was elected vice-commodore to succeed Mr. Mitchell. L. G. Fowler was elected rear-commodore; Shirley Pattie, captain; John N. Woodside, secretary, and F. H. Smith, paymaster. Charles McDermott, W. E. Cook, Rev. Dr. Sparks, W. Melton, Dr. R. M. Barrett, W. M. Jones and A. L. Jones were elected to the Board of Governors. Mr. McDermott was re-elected Chairman of the House Committee.

The annual reports showed 167 members, active and non-resident, and that the general condition of the club is encouraging. A proposition to drop the club's membership in the Chesapeake Bay Yachting Association finally prevailed by a majority of one vote.

Erie Yacht Club Elects Officers

The Erie Yacht Club held their annual meeting at the club house Nov. 8, and elected officers for the year. Geo. Bliss was elected to represent the club at the Power Boat league meeting in Detroit this winter, and also at the Inter-Lake Association. The other officers are:

Commodore, W. S. Foster; vice-commodore, Geo. Feuchs; rear-commodore, J. P. Cunnins, of Conneaut; fleet captain, F. M. Hoyte; secretary, G. R. Oberholtzer; treasurer, R. R. Whitley; measurer, Grant Lynch; regatta committee, B. Braggins, Clarence Brooks.

Extensive plans are being made to enlarge the scope of the club and the advisability of erecting a new club house was acted upon favorably.

Officers for Bensonhurst Y. C.

The regular ticket of the Bensonhurst Y. C. went through without opposition at the annual meeting of the club.

Commodore, G. R. Le Sauvage, sloop Joy; vice-commodore, Dr. C. L. Atkinson, sloop Cyrie; rear-commodore, H. A. Robbins, yawl Waukan; secretary, W. W. W. Roberts; treasurer, William Wilson; measurer, Alfred Mackay. Board of directors, C. H. Clayton, R. W. Rummell, J. W. Cherrie, Robert Dingman, C. H. Baser, R. B. Moore, W. M. Kettner, Delegate, Y. R. A. G. B., H. D. Scribner; delegates, A. P. B. A., Samuel Cochrane and Walter M. Bieling. Regatta committee, J. F. Doutney, W. V. Collins, H. D. Scribner; auditing committee, F. L. Billingham and H. Hawkins; nominating committee, George L. Beston, chairman; D. S. Holcomb, F. L. Billingham, A. H. Hawkins, C. H. MacKrell.

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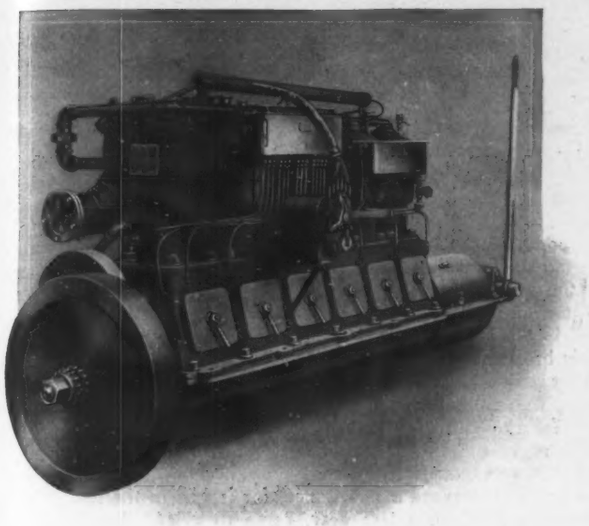
15,500 Miles *Without Repair*



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July 12,1911.

Mr. John J. Amory,
Gas Engine & Power Co.,
Morris Heights, N.Y.

My dear Mr. Amory:-

I have your letter of July 10th suggesting that we enter the Rainbow in the Great Lakes Power Boat League Cruise to contest for a prize offered by Mr. Scripps.

I am not much on cruising myself, especially for prizes, preferring to go it on my own hook and at my own convenience.

You will be interested to know that the Rainbow has logged a total of 15,500 miles since she came out, this being her fifth season.

She has undergone no repairs to hull or motor and insofar as I can see is in as good condition today as when you turned her over to us.

A record like this is the best prize that any man can have.

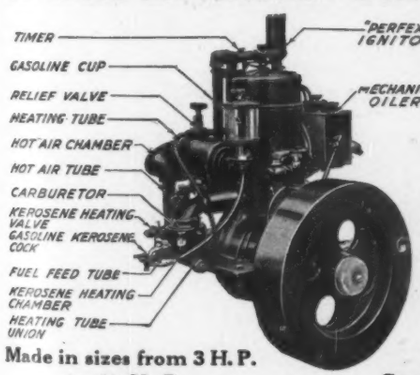
With kind regards, and thanking you for your suggestion, I am,

Very truly yours,

Richard P. Joy

IT WAS A 3 H. P. KNOX MOTOR

that made it possible for the *Sea Bird* to cross the *Atlantic Ocean.*



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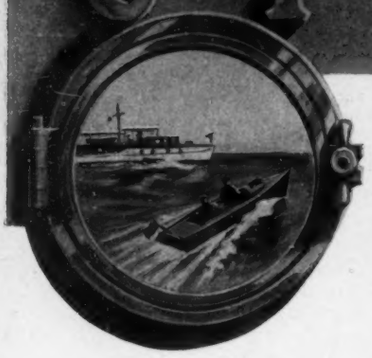


Down the Niagara Gorge in A Motor Boat.

The next time you go to Niagara Falls, walk down to the gorge and as you watch the waters dash and twist and writhe as if in agony, in their mad dash down the awful chasm, try and picture if you can, a man in a fifteen-foot motor boat dancing down that mad stretch of waters, with the only thing between him and sure death a small ten-horsepower gasolene motor.

That was the sight witnessed by several thousand people on the afternoon of Oct. 29th, when Capt. Klaus Larsen, who seems to be the only man in the world with an ambition to shoot the Niagara Rapids in a motor boat, made the only successful journey of its kind ever accomplished. From the time when he was seen to leave the Maid-of-the-Mist landing on the Canadian side, until he arrived safe and smiling 31 minutes later at the Lewiston dock, thousands were in an agony of apprehension, and no life insurance expert would have given ten cents for his chances of escaping alive. It was a thrilling ride, and one that covered the nervy Dane who made it with glory enough to last, for he says that he will never repeat the trip.

The doubts of the assembled spectators received a rude jar when Larsen appeared about 1:30 and got into his little craft. The Scripps 2-cylinder engine was started and covered up, so that from that time on Larsen not only did not, but could not touch it. At 1:42 he pulled away from the dock, and put in the next seven minutes assuring himself that his motor was working perfectly, by circling about in the waters under the falls. At 1:49 he made up his mind that the time had come to take the fatal plunge, and he turned downstream and headed straight for the opening of the gorge.

For a few minutes all was smooth going, but at 1:55 he reached Swiftdrift, where the current begins to gain headway for its mad race through the narrowing confines of the towering gorge. The little boat began to dance uneasily, as though dreading its plunge through the seething waters ahead. In toward the Canadian shore shot the little craft, minding the tiller of its master, and a moment later it was tossing in the thick of the mighty battle of the waters. Now on the crest of a high wave, now down in the cradle of the surging current it danced, and then it sank from sight in the frightful 40-foot trough of raging waters, known as Webb's Wave, after the famous English swimmer who lost his life there several years ago.

Here the plucky Dane disappeared from sight for at least five seconds, and the people who lined the cliffs figured that he was surely gone. But a few moments later as the little craft shot into sight again, he was met with a rousing cheer. Time after time the rough elements seemed on the point of swamping the daring navigator, but the boat always righted itself.

At 2:05 he shot into the great whirlpool, which draws into its mighty maw every log or boat that comes over the falls, and grinds them hundreds of feet below the surface, into match-wood. The pull of the current caught the boat, and for a few minutes there was a battle fought between the sturdy Scripps motor and the treacherous drag of the current. Finally the boat won the battle, and breaking from the clutch of the waters, it shot swiftly into the lower river.

Here, just before he struck the Devil's Hole Rapids, Larsen stopped **to get his breath, and to shake the water** out of the canvas guard which the torrent above had beaten down about his knees. He threw the tiller over with the nose of the boat pointing upstream, where it held its own against the swift current while its master adjusted the bag-like canvas arrangement about his waist. When this was accomplished, he resumed his perilous journey.

Here Larsen increased his vigilance, for it was in the lower rapids that his former attempt made last year, came to grief. In this part of the river, rocks lie hidden just below the surface, and danger threatens every foot of the way. This time the engine did not fail him, and he came through perfectly. With the skill of a lumberjack on a log, he shot his little craft safely through the rapids, and won his way to safety.

Just 31 minutes after his start, Larsen arrived at Pitz's Dock at Lewiston, cool, collected and smiling. Several hundred pounds of sand which he had placed in the bottom of the boat for ballast, had been soaked through, and the water stood nearly four inches deep in the boat. A little higher, and it would have made serious trouble for the engine. He had completed his trip just in the nick of time.

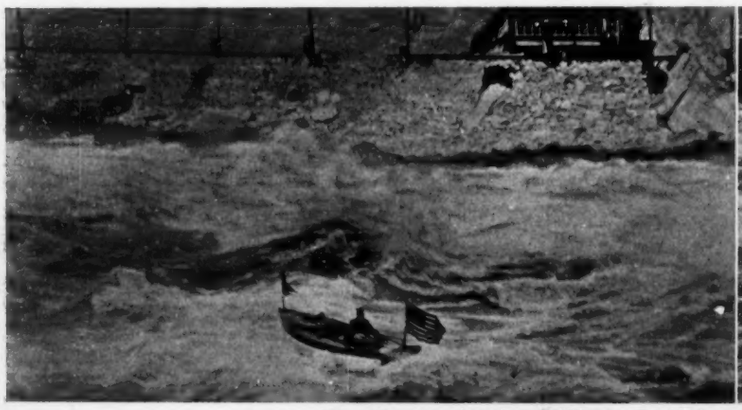
---

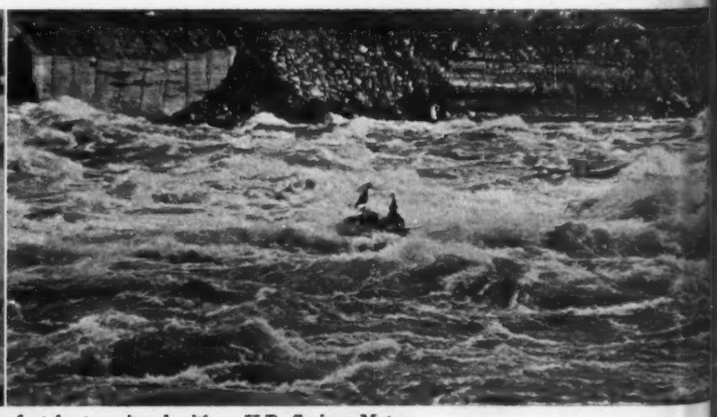
234 Miles in 10 Hours and 13 Minutes With a Loew-Victor.

The speed boat Victor, owned by W. F. Dunn of Portsmouth, Va., which has tossed spray upon the stem of every boat in and out of her class in this section, recently added new honors to her long list of achievements. It made the trip to Richmond from Norfolk, 115 miles, in 4 hours and 58 minutes, at an average speed of 23 miles an hour, under unfavorable conditions. This is the local record for motor boats for long distance stands as far as can be learned.

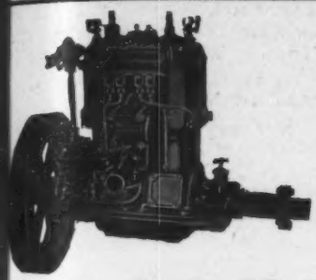
The Victor's start for Richmond was scheduled for 5 a.m. but owing to the heavy rain it was 7:45 before the little speed boat passed Hospital Point on her way up the James River. Her passengers were Mr. Dunn, her owner, and M. H. M. Bramberry, as mechanician. The Victor arrived at Richmond at 12:42 o'clock in good condition. Her motor did not stop once, nor did it miss an explosion.

A stop of 43 minutes was made at Richmond to give the crew a few minutes for rest and supplying the needs of the inner man, and at 1:25 p.m. the Victor turned her sharp nose down stream, reaching Norfolk at 6:40; the motor on the run up was not stopped once during the trip. A stop of ten minutes was made at Upper Brandon to take on two pas-





Klaus Larsen going through Niagara Rapids in 15-foot boat equipped with 10-H.P. Scripps Motor.



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By Capt. A. J. Kenealy

The eighth edition of this book has been thoroughly revised and brought up to date in every respect. It contains a fund of valuable information on the selection, care and use of a small boat. Capt. Kenealy also gives some excellent advice to the amateur skipper on everyday seamanship. One chapter of this book may be the means of winning a race for you—another may help you to avoid danger and discomfort in weathering a storm.

SOME OF THE CHAPTER HEADINGS ARE AS FOLLOWS:
Choice of a Boat—Sailing in a Gale or Squall—Fitting Out—Overhauling—Theory and Practice of Sailing—Compass and Charts—Nautical Terms—Splices, Knots and Bends—Rules of the Road at Sea, Weather Wrinkles, etc.

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sengers, thus making the actual running time on the return trip 5 hours and 15 minutes, in spite of the additional weight. The total running time for the round trip was just 13 minutes over ten hours.

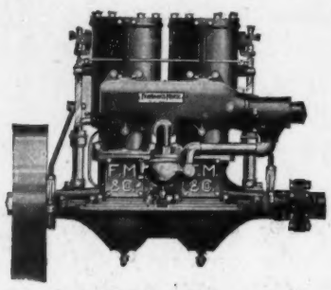
The speed maintained, about 23 miles an hour, was also creditable. Not only was the Victor not in racing trim, but she was heavily loaded with the extra gasolene needed for the long run.

Norfolk motor boat enthusiasts will be pleased to know that the Victor is a home production, the hull having been built by the owner at his yard on Scott's creek, and the motor, a 40-H.P. 6-cylinder Loew-Victor, having been installed by the Wallace Brothers, the well-known "Gas Cranks" of Norfolk.—*From Virginia Pilot, Norfolk, Va.*

A New York Office for the Dayton Electrical Mfg. Co.

The Dayton Electrical Mfg. Company announces the appointment of Mr. R. V. Sutliffe to take charge of their New York office at 136 Liberty Street, New York. Mr. Sutliffe is a technical expert in electrical matters, and has made a very complete study of electricity as applied to ignition and electric lighting work.

From this New York office, the Dayton Electrical Manufacturing Company will be able to give service to their customers in New York, New Jersey, Long Island and Connecticut. They are in a position to furnish and install electric lighting plants for boats of any size, from 30-ft. to 160-ft. cruisers. Mr. Sutliffe will also carry in stock a complete line of electric lighting accessories, fixtures, wiring, supplies, and incandescent searchlights.



Fairbanks-Morse 15-H.P. 2-cylinder. Type "K" Marine Engine.

New Type Fairbanks-Morse Marine Engines.

To meet the demand for cabin cruisers, fishing boats and other types of heavy vessels, Fairbanks, Morse & Co. are bringing out a new model engine for 1912 delivery, known as type "K." These are two-cycle, three-port engines, 5½ inch bore, 6 inch stroke, built in one and two cylinders developing 7½ and 15 H.P. at 550 R.P.M. The design is marked by some unique features of the exhaust and intake manifolds, and by outside by-pass for water from the cylinder head so that water never comes in contact with the cylinder head gasket. Back firing is absolutely prevented. The engine is regularly made with make-and-break ignition and plunger pump. Positive sight feed oilers and large bearing surfaces insure long life.

Other types of Fairbanks-Morse Marine Engines which have been so popular will continue to be made in the following sizes: Type "E" a two-cycle three-port engine, 3¾ inch bore, 3¾ inch stroke, 3½ and 7-H.P. at 800 R.P.M., is of the split base and solid head model and furnished with jump spark ignition, rotary pump, sight feed oilers and float feed carburetor. Its simplicity and durability make it particularly suitable to small runabouts, family type boats, and light work boats.

Type "G," two-cycle, three-port engine is built in four sizes, 1, 2, 3, and 4-cylinders, rated respectively at 6, 12, 18, and 24-H.P. at 800 R.P.M. It is furnished with jump spark ignition, rotary or plunger pump, pressure oiling system and a device for preventing back-fire. It is especially suited to fast and medium speed runabouts, launches, small cruisers and work boats.

The type "S" four-cycle, 1, 2, and 4-cylinders, is rated at 4½, 9 and 18-H.P. at 800 R.P.M. and is suitable for heavy hull runabouts, launches, work boats and cruisers. Jump spark ignition is furnished and the engines have a very wide range of speed, regulated by the throttle and spark.

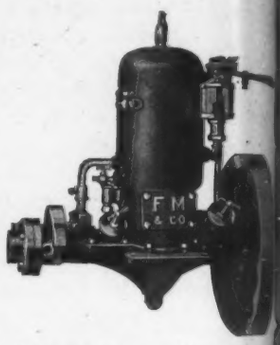
The type "B" is built in 1, 2 and 3-cylinders, developing 20, 30 and 40 H.P. at 350 R.P.M. and is suitable for very heavy service, where long life, high efficiency and dependability are absolutely essential.

Gray Motor Makes Good in Big Home-Made Ferry Boat.

Early in the spring of 1911, Mr. James Avery of Poplar, Mont., started to work on the construction of a fairly large flat bottom ferry boat to be used in transporting foot passengers, horses, and freight between a point at Poplar, Danville and Fort Peck Indian Reservation, Mont. This ferry boat was designed after Mr. Avery's own ideas of what a ferry boat should be for this particular kind of service in shallow water and was equipped with a heavy duty 24-H.P. Model "T" Gray Motor.

The boat is of quite heavy construction. The outfit when completed was 40 feet long by 25 feet wide and is registered to carry 56 tons.

As will be noticed in one of the photographs it has quite a large cabin and pilot house, a small part of the cabin being used for an engine room and the balance for the convenience of the passengers. The paddle wheel outfit, as reported by Mr. Avery, was a great success in every way. The boat was launched on May 11th and continued in daily service throughout the entire summer, netting him an average of $40.00 per day. The rate charged was 25 cents for foot passengers, 50 cents for single rig and $1.00 for double rig. The largest load that the ferry ever carried at one time was one 35-H.P. steam engine and separator, 10 plows, large water tank, 4 horses, and other small articles, the entire cargo weighing about 36 tons which was not much more than half of the boat's actual rate in capacity, so she could easily have carried a much larger load than this, had the occasion demanded it.



Fairbanks-Morse 3½-H.P. single cylinder Type "E" Marine Engine.

This ferry boat of Mr. Avery's was inspected by the U. S. Government inspector of Dubuque, Ia., the official steamboat and boiler inspector in that district and passed inspection O. K. as A No. 1.

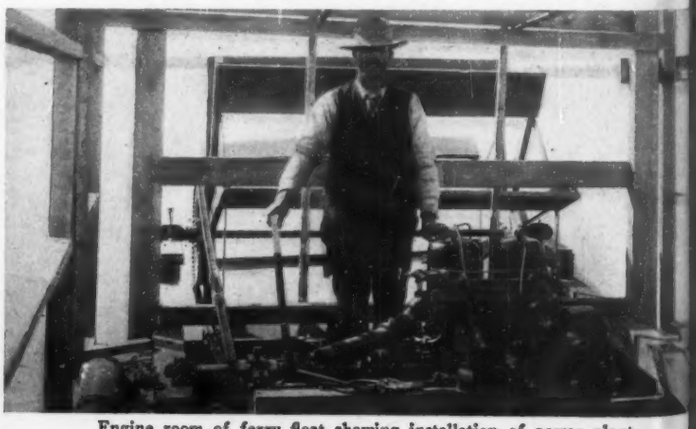
Fox Motors for 1912.

The Dean Mfg. Co., of Newport, Ky., have just issued their catalog for 1912, and in reviewing it, one is able to gain a very good idea of the line of Fox Motors, as simplified for 1912. The usual introduction and description of the various parts has been made interesting by a number of cuts and sectional views, with a history of the two-cycle motor, including two- and three-port motors, and the Fox Fourth Port Accelerator. To this they have added for the coming season a combination of the Fox Fourth Port with a rotary valve, distributing the fuel to the different cylinders. This type is used only on Fox De Luxe Aero Motors.

This new departure is of particular interest, especially the arrangement which is extremely simple.

The catalog contains 30 pages and will be sent free of charge by writing to The Dean Mfg. Co. and saying that you are a reader of YACHTING.

A home-made ferry float equipped with 24-H.P. Gray motor.



Engine room of ferry float showing installation of power plant.

NOT AN EXPLOSION MISSED IN TEN HOURS FAST, HEAVY RUN—A MODERATE PRICE WILL BUY YOU THAT UNFAILING EFFICIENCY IN YOUR MARINE MOTOR.

HIGH price does not guarantee efficiency in Marine Motors. For inefficient oroduction is costly. It costs less to secure the best of manufacture on a great scale than to manufacture, either well or poorly, on a small scale. The highest productive facilities, in methods and in materials, are at the command only of the engine manufacturer whose requirements are vast. And so it is that we are able to put the utmost in serviceability at a moderate price into Loew-Victor Engines.

Loew-Victor Engines

The extraordinary motor-boating record made by the "Victor" at Norfolk a few weeks ago, the account of which is here reproduced from the Norfolk, Va., daily papers, is a remarkable record for a motor boat—but it is just the ordinary and always-to-be-depended-upon service of the Loew-Victor Motor. This motor will give you such service 365 days in the year. You will never have a moment's embarrassment from engine trouble when a Loew-Victor is the power that drives your boat. Wherever there is pleasure-boating water—rivers, lakes, harbors—owners of Loew-Victor engines are giving themselves and their friends the satisfaction and enjoyment of using a *real* motor—without the loss of a moment or a dollar on account of motor breakdowns or inefficiency. The Loew-Victor delivers more than the most exacting would expect of it.

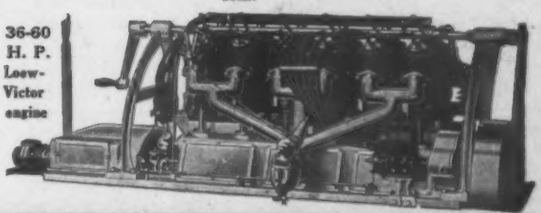
The "Victor," a Norfolk Motor Boat, breaks local records in trip from Norfolk to Richmond and return

234 Miles in 10 Hours and 13 Minutes

The speed motor boat Victor, owned by W. F. Dunn of Portsmouth, which has tossed spray upon the stem of every boat in and out of her class in this section, added new honors to her long list of achievements Sunday. It made the trip to Richmond from Norfolk, 115 miles, in four hours and forty-eight minutes, or an average speed of 23 miles an hour, under unfavorable conditions. This is the local record for motor boats for long distance stands, so far as can be learned. The total running time for the round trip was just thirteen minutes over ten hours—heavily loaded with the extra gasoline needed for so long a run and carrying two extra passengers for over half of the return trip.

Norfolk motor-boat enthusiasts will be pleased to know that the Victor is a home production; the hull having been built by the owner at his ship yard on Scott's Creek, and the motor, a 40-H. P. Six-Cylinder Loew-Victor, having been installed by the Wallace Brothers, the well-known "Gas Cranks" of Norfolk.

A FREE BOOK—get your copy. It illustrates and tells every detail of Loew-Victor construction and equipment. Not a book of generalizations—but of *specific facts*. Shows Models from One Cylinder, 6 H. P., to Six Cylinder, 36-60 H. P. Gives every point of information that you will want to know about the engine for your motor boat. Write for this Book to-day.



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Approved by United States Steamboat Inspection Service and Motor Boat General Insurance Agencies.

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1358 Broadway, New York

JEFFERY'S MARINE GLUE No. 7 Black, White or Yellow Glue, Soft Quality for Waterproofing Canvas, etc.

Its peculiar properties are those of flexibility and durability, and although it becomes soft and pliant under heat, it still retains its adhesion to timber, fiber, etc., and is clean and insoluble in water.

APPLICATION TO DIAGONAL PLANKING OF BOATS

This Glue is made expressly for use in combination with calico between the double planking of diagonally built row boats and motor boats. Melt the Glue, and paint it on the first series of planks with a stiff wire-bound brush; the calico should then be laid on and ironed through; another coating of glue should be painted over, taking care to well cover the calico; after that put on the outside longitudinal planking, and apply the copper rivets in the usual way. The boat will then be found to be perfectly water-tight, and the Glue will expand and contract with the timbers without cracking.

One pound will waterproof three square feet of canvas.

Send for directions for use.

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for 1912

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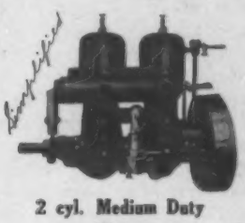

2 cyl. Medium Duty Motor

Now is the time to place your order for spring delivery

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HEAVY DUTY	MEDIUM DUTY	SPECIALS	DE LUXE
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NEW ORLEANS: C. B. McCrocklin, 121 N. Carrollton Ave.
SEATTLE: Manny Meyers, 520 First Ave., South.

THE DEAN MFG. CO. - 212 Front St., NEWPORT, KY.

2 cyl. Heavy Duty Motor

3 cyl. Medium Duty Motor

Consult YACHTING's Information Department on any of your problems. Its service is absolutely free.

A Successful Rotary Valve Motor

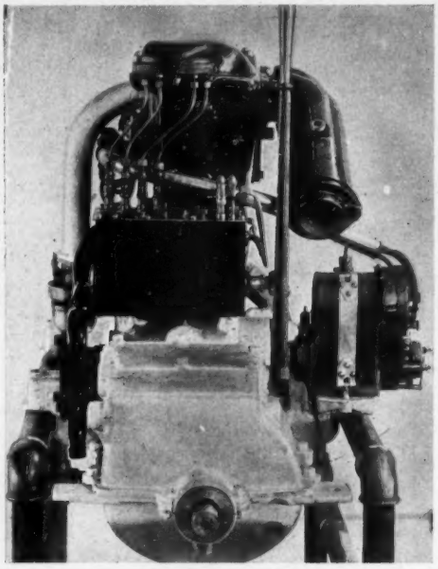
The problem of designing and constructing a silent smooth running motor embodying all the advantages of the 2-cycle and 4-cycle types, is one that the Reynolds Motor Company, of Detroit, Mich., have been working on for some time and which it now looks as if they had solved in their 4-cylinder 20-H.P. rotary valve motor. Mr. A. H. Campau, General Manager of the Reynolds Motor Company, says that this motor has met with instant acceptance at the hands of all naval architects who have installed it.

Four-cycle motors have for some time been used in marine work, but there is usually a good deal of work connected with their operation which a novice cannot do himself, such as valve grinding, valve timing, adjustment of push rods, etc. The great valve problem, that of getting the gas in and out of the cylinder quickly, has been entirely solved. Not only this but the makers claim the construction is such that a deposit of carbon inside of the cylinder, or the sticking of the valves, is impossible. Many engineers predicted, when the motor was first designed, that difficulties would be experienced in this respect, but it has been found, after careful tests, that the reverse is true. The rotary valve which seats against the head of the cylinder is allowed enough freedom, so that there is at all times an oil film of about .002 inch thick between the valve and the seat itself. While it is true that any sustained pressure against the under side of the valve will tend to squeeze the oil out, yet owing to the fact that the pressure of the explosion is only for a small fraction of a second, and is immediately succeeded by suction, any sustained pressure cannot be maintained.

The valves not only work perfectly, but are lubricated in an excellent manner. Any wear that might take place can be very readily taken up; the valves need no grinding, in fact they constantly maintain their seats. Any particles of foreign substance that might tend to produce abrasion are collected in small holes drilled in the faces of the valves. The ports are generous in size and so arranged as to allow free passage of gas in and out. The opening, instead of being annular, is an open space.

There is no throttling of gas or impinging against the stem or itself, as in the ordinary poppet valve type. Not only this, but the continuous rotation of the valves, which are enclosed, produces very little noise. There is an entire absence of the little hammer blows so noticeable in the poppet type. Cams, cam shafts, springs, etc., are entirely eliminated, the valve gear being confined to one cross shaft, one verticle shaft, and the necessary helical gears, all of which are enclosed, and noiseless.

The gears which drive the valves are keyed to the stem and the nuts on top of the gears are locked by means of a novel lock washer. A unique feature in the design of this motor is the lubricating system—a force feed lubricator, driven from the cross shaft, supplying oil to each of the valves, through force pipes which enter holes drilled in the cylinder cover. Their location is such that the oil is led through these passages and dropped into the top of each one of the valve spindles in such a way that it flows downward, lubricating the sides and face of the valve in a positive manner. The main bearings are lubricated by splash, the oil flowing down from pockets cast in the side of crank case.

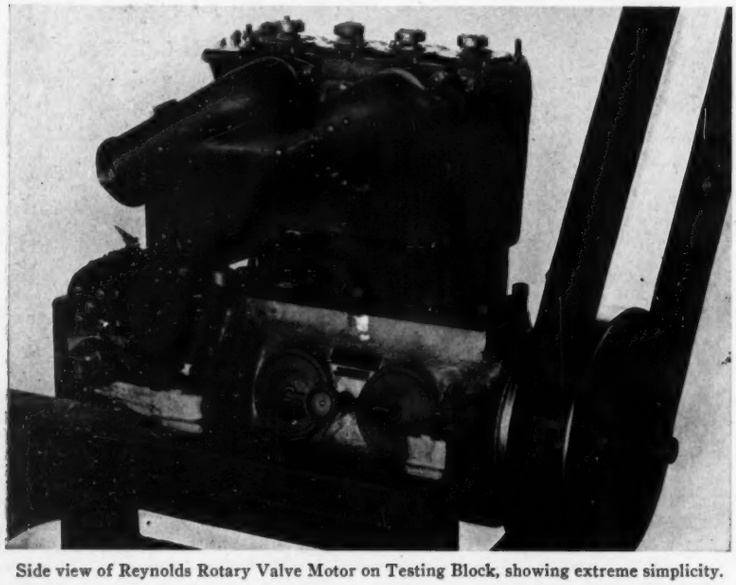


Rear view of Reynolds Rotary Valve Motor.

Other unique features are a water cooled exhaust pipe; a compact arrangement of water pump, magneto and lubricator; a short well-constructed ignition conduit; a large, stiff, two bearing crank shaft; very light but well designed pistons and connecting rods and an extremely accessible crank case.

The general dimensions are: Bore 3½ x 4 inch stroke; connecting rod bearings 1⅞ x 2⅝ inches and main bearings 1⅞ x 3½ inches and 4 inches respectively. The flywheel is 14 inches in diameter, 4 inches face, made in a dished shape which permits of its being placed close to the crank case. The entire motor is only 31 inches long over all, and 28 inch high. Its weight complete, with magneto, is lbs.; its H.P. is from 15-20 at a speed of 750 1,300 R. P. M. All reciprocating and revolvi parts are enclosed, and the engine runs with pr tically no vibration.

There are now a considerable number of bo so equipped and in operation. Reports fr them are exceedingly enthusiastic. The winn of the 50-mile endurance handicap race, at Ja sonville, Fla., by "Peerless," which is equipp with a Reynolds Rotary Valve Motor speaks w for the practicability of this design.



Side view of Reynolds Rotary Valve Motor on Testing Block, showing extreme simplicity.

The Test of Valspar—A Correctio

In an advertisement of Valentine & Co.'s n varnish—Valspar—in the December issue YACHTING, the printer juggled with the type such a way as to make the meaning of a senten somewhat obscure. In speaking of the w known test of this varnish which Valentine Co. have been demonstrating for some time namely, the placing of a surface varnished wi their product under water to show how it r tains its color—the advertisement should ha said: "See if it turns white in water." Inste of that the compositor made it read: "See if turns in white water." Everyone who has us this excellent varnish knew what was meant, they have seen the quality and durability of demonstrated many times. But those to who this varnish was new might have wondered the meaning of the sentence, being, perhaps, f miliar with other brands of water (strong w ters, splits, etc.), but not with white water.

A Book Every Yachtsman Should Have

It is a distinct pleasure in this day, when much trash is published in the form of sea stori and novels, to record a new edition to that cla sic dear to the hearts of all sailormen, "T Years Before the Mast," by R. H. Dana. Th book, written and published by a young man ju out of college, shortly after his return from voyage to the west coast of North America 1834-36, has stood the test of time by reas of its simple, straightforward style and has w a place in the heart of every man who has a dr of salt in his veins. This present edition is t handsomest that has ever been published and illustrated with a number of color plates fro paintings by Charles Pears. There is a prefa written by Dr. Wilfred A. Grenfell of Labra fame. The book makes a particularly stro appeal to the sailor man. It is published by t MacMillan Company, the price being $2.00.

The Log of the Adventuress

(Continued from page 37)

he said he had had enough—that life was t dear to him to throw it away foolishly. He s about, as though the jaws of death gaped befo him.

Just before dark we picked up a pilot, a entered the harbor in one of the most unusu electrical storms that Charleston had had f years. On the whole the day had been full excitement, and one long to be remembered, a it served fittingly as a climax to a wonderf cruise. For here our party broke up. I w obliged to leave the ship and hasten north a after having gone ashore waved a reluctant goo by to the good old Adventuress and what w left of her crew as she lay at anchor off t Charleston Yacht Club.

"MR. MANUFACTURER"

—OF—

Motor Boats, Engines and Accessories

You are doubtless aware that the industry in the East shows undoubted prospects of activity the coming season.

This is evident if only from the fact that more space for the coming Boston Motor Boat Show in January has been sold than ever before in its history.

The show is going to be a "Corker," and you will want to be represented and obtain some of the business.

NOW IS THE TIME to apply for space if you want a good location. Don't delay! Do it now!

AUSPICES—New England Engine and Boat Association

For particulars and diagrams, address

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THE W.C. DROP FORGED ROWLOCK

This is the strongest rowlock made. It is drop forged in one piece from the solid bar. It cannot break; it cannot rust for it is heavily galvanized.
Don't let an extra ten cents stand between you and this rowlock, for a cheap cast iron rowlock is a dangerous thing. The "W. C." trade mark stands for "quality in material, correct design and advanced workmanship." We are the sole manufacturers of this rowlock; you can depend on it, as you can on all of our goods.
Write for fuller particulars. *Do it today!* A thing done when thought of is never forgotten.

WILCOX, CRITTENDEN & CO., Inc.
Established 1847
Largest Makers of Marine Hardware
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PROPELLER EFFICIENCY IS ATTAINED
BY USING
The Hyde Turbine Type Propeller
MADE OF MANGANESE BRONZE
The Propeller of Quality
ASK ANY OF THE THOUSANDS OF SATISFIED USERS
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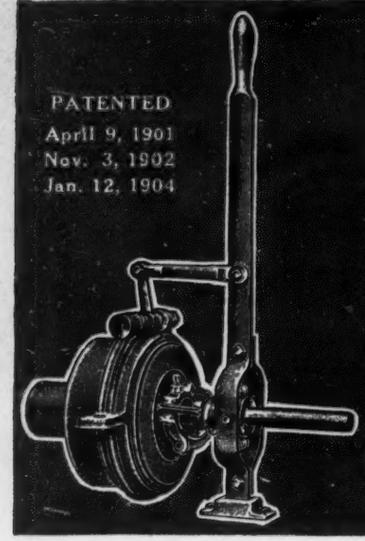

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HARDENED STEEL SPUR GEARS
MOST RELIABLE HIGHEST GRADE EASIEST TO INSTALL
Four sizes carried in stock
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18 feet x 5 feet with oars, grating and complete rig.
Larger boats, $85, $90 and $110, $135 decked.
Send for circular. Order early for delivery.
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DAYTON ELECTRIC LAUNCH LIGHTING OUTFITS
are made in all sizes, for all styles of motor boats. Just turn a switch and the light is there. Send for our free book today.
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affords their customers a perfect fitting of the world's finest ready-to-wear shoes, for men and women, $7 up. Send for Style Brochure
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Dealers in Fine Yacht Duck, Rope and Fittings

High Grade Heavy Weight Tanks
For Gasolene, Water and Air of any shape or dimensions desired for any pressure. We make only work of merit.
"Light Competition Work Not Wanted."
Galvanizing of all kinds of marine work.
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Quality Cushions
Mattresses, Pillows and Upholstery
Manufactured since 1845 by
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202 Front Street, New York City
NO CATALOGUES

Don't Forget to Specify
A DAVIS DINGHY
As part of the equipment for your new boat. If you want to know why a DAVIS DINK tows better, weighs less and carries more than any other Dinghy built, send for the Davis Dinghy Book, DAVIS BOAT WORKS, Sandusky, Ohio.

Hints on Towing the Dinghy

(Continued from page 24)

of the sea, especially with a following se which is always the meanest for towin Always have a painter long enough, ho ever, to give her all the scope she needs, a even then it may be sometimes necessary to be an extra line to it. In making the painter fa make a hitch that will not jam so that if y ever want to use the boat in a hurry you c cast her off without any delay or trouble.

It is wonderful how much a well designe dinghy will stand in the way of rough wate I have seen them ride over a heavy sea half fu of water and bury their nose in an oncomin wave until full to the gunwales, and then empt it out over the stern as she heaves over the se all the time following along as nicely as ca be expected, except for the pull on the painter an the necessary strain on the boat's constructio Such a performance, however, usually causes th tender to leak owing to the wrenching she re ceives.

America

(Continued from page 28)

America raced and defeated the schooner Tita nia, a vessel of 100 tons, owned by Robe Stephenson. This was one of the vessels th did not start in the Isle of Wight race and he owner thought she could beat the America. Th race was sailed in heavy weather, 20 miles t windward and back, and the Titania was beate nearly an hour.

Perhaps these conclusive victories in som part overcame British scepticism as to the yacht abilities. At any rate, not long afterward sh was sold by Commodore Stevens, acting fo all the owners, to Lord John de Blaquiere fo $25,000. While in his possession she raced an defeated the Swedish schooner Sveridge fo $500 a side. This was a race of 20 miles t windward and return from the Nab Lightshi America won by 26 minutes.

Lord de Blaquiere sold the America to Lor Templeton, who also raced her. She was sub sequently laid up in the yard of a shipbuilde named Pitcher at Northfleet, and remained there for several years. Finally, when Pitcher found a purchaser for her the schooner was found t be in bad shape and was rebuilt to some exten H. E. Decie was the next owner, and he changed the name of the yacht to Camilla. Sad to say the "large gilt eagle resting on two folded white banners garnished with beautiful flowers of a green color" on the yacht's stern was removed and placed above the door of a hotel at Ryde.

As the Camilla, with rig somewhat altered spars shortened and sails smaller, America's champion cruised to the West Indies with the British flag aloft. She returned to England in a short time and raced with indifferent success. In the first year of the Civil War the unnamed purchaser in Savannah obtained the vessel, and then began her unchronicled but probably strenuous career as blockade runner and despatch boat in the Rebel service. She was then called the Memphis. It is modestly said that in a strong breeze she could outsail the old frigates and once, after an exciting race, got away from the frigate Wabash.

It was in April, 1862, that the United States gunboat Ottawa steaming up the St. John's river, Florida, discovered two masts projecting above the water. The sunken craft was afterwards raised and proved to be the famed America. Commander Thomas H. Stevens, in charge of the Ottawa, waived all claim to prize money on the schooner providing she was turned over to the authorities at Annapolis for use by the mid-

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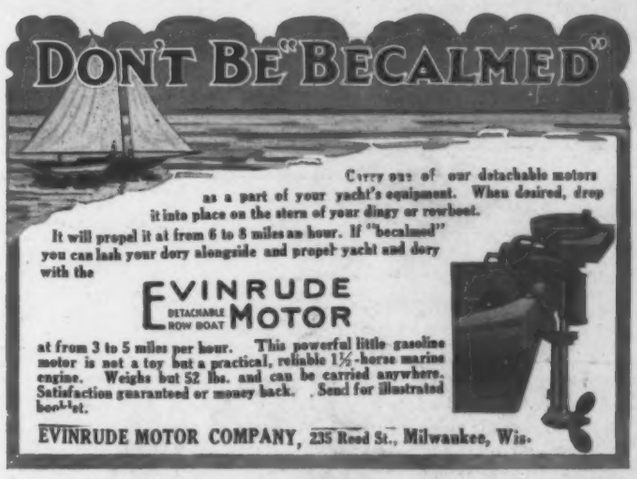

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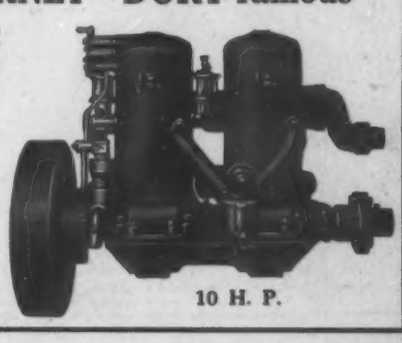

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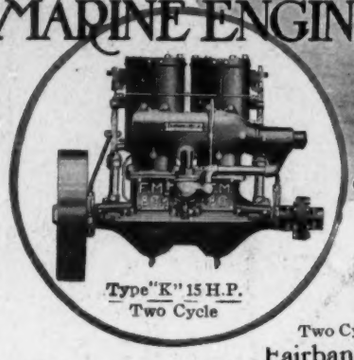

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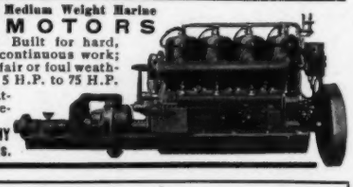

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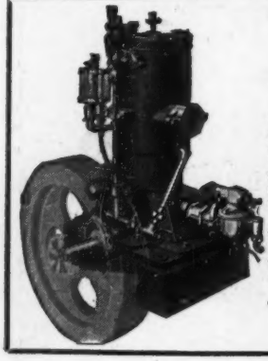

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shipmen. This was done and once more, wi her original name restored, she was under th stars and stripes. At times she was used a tender to a training squadron which include such noted old warships as the Marion, Macd donia, and Savannah.

Speedily she outlived her usefulness as navy vessel, and in 1870 changed owners again this time being purchased at auction by Gener Butler for $5,000. She was put in trim by Ge eral Butler and took part in the first race fo the Cup on this side when the Cambria cha lenged, finishing fourth. The America was race with varying success in the 70's and in 1880 wa rebuilt by Kelly after plans by Edward Burges In 1885 changes were made in the vessel again and in this year occurred what was practicall her last race. On July 9, 1885, she sailed a ra against the keel schooners Gitana, Fortuna an Mohican. She finished last, beaten 40 minute by the winner.

When, after having seen practically 35 year of service it was thought advisable no longe to race the first Cup yacht, her active days di not cease as she took part in the annual cruis and was frequently seen at Newport and Ma blehead. For many summers General Butle found the America a useful and staunch vesse She is now owned by Congressman Butler Ame a grandson of General Butler.

To Baffin Land

(Continued from page 17)

of both, in his official capacity as cook of th good ship Daryl. "Daws" did not enjoy th combination of ground-swell, oil engine and co smoke, but he was dead game, and got us up a excellent breakfast—in time.

We passed back through Kirpon Run on more and ran up the Straits to Point Amou anchoring about sundown in a cove to the wes ward of the Marconi Station to await the com ing of the Corsican.

I virtually lived at the station for the ne 48 hours, trying to get some word of the shi as I feared she might slip by in the fog or nigh without our hearing of it. Finally, my anxie was relieved by word from the Belle Isle opera tor, that he had been in communication with th Corsican, which was hove to in the fog, 100 mil east of the Straits.

At last came a message from Dr. Grenf himself:

"Be two miles off Point Amour nine o'clo sharp to-night."

It came off a beautiful evening, and we stea out into the Straits, at about 7:30. As we ran o from behind Point Amour, *there* stood a lit in the offing, with signals flying. My heart sa as I suddenly realized that whereas we were ru ning on Montreal time from the Marconi statio the Corsican was probably carrying 60th meridi at the time when the Doctor's message was se I could not bear to think that we were too la after all our anxious waiting and planning. Th Chief gave her all he could, and I made eve effort to attract the steamer's attention. It w not yet dark enough to burn flares. But the l ship slipped past to the west, and was seve miles away before we could gain her wake.

We started in shore to hail the lighthouse an ask what the signals had said when George Fo pointed to the eastward, and there, to my co light, I saw smoke. It was really the Corsica this time. The water, fortunately, was smoo as oil, so we were able to go alongside an take Dr. Grenfell on board, bag and baggag amid the cheers of some 1500 immigrants wh lined the rail.

Daryl sheered off, the Corsican blew th

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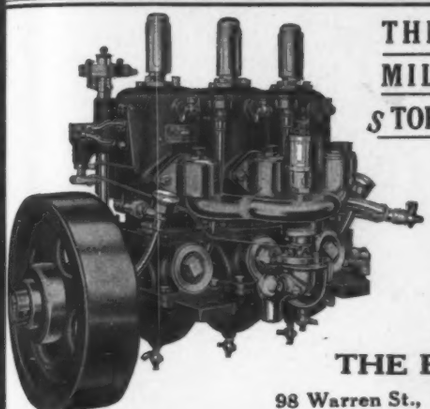

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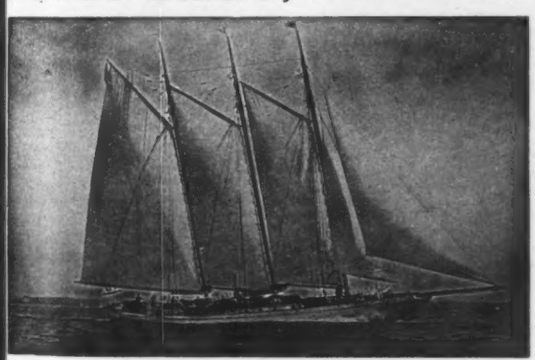

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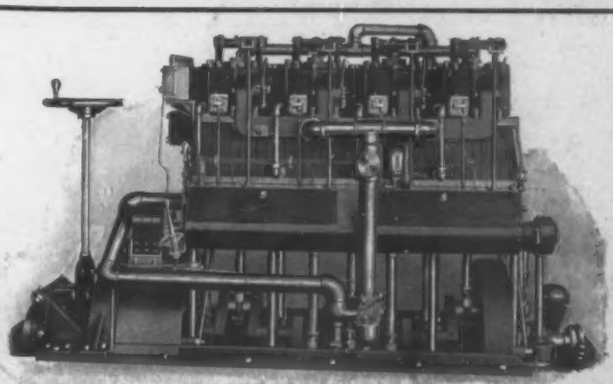

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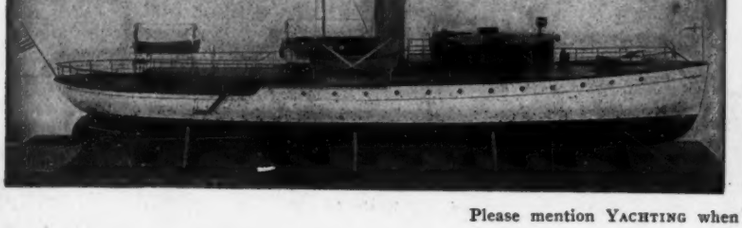

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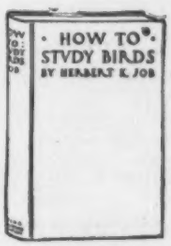

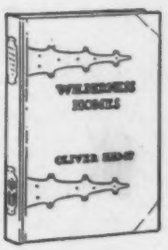

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To Baffin Land

long blasts in her deep bass, and the passengers gave three good, rousing cheers, as Dr. Grenfell stood on our cabin top and waved his cap to his recent shipmates; then darkness separated us.

The Doctor quite naturally assumed the task of pilot while with us on the run east to Battle Harbor, and fog troubled him as little as darkness does an owl. We would frequently be right atop the landwash before seeing anything; then, as Daryl swerved off, to round the point for which we had been aiming, the Doctor would clap his hands and exclaim, "My! that was a fine shot! she came just as true as a die." Which was quite so, but the Chief was greatly amused, and every time after that, on the whole voyage, when we would come near running ashore in the fog, he would grin and exclaim, "My! what a shot! too bad we haven't the Doctor on board."

At Battle Harbor we refilled our tanks; and now, at last, on the Atlantic Labrador, girded ourselves for the long, hard drive North.

The departure from Battle Harbor occurred in the morning of Saturday, July 22nd. There was a fresh wind down shore, so it seemed advisable to save fuel. Accordingly, we got under way with sail alone. Battle Harbor is a narrow place, and, at the time, was crowded with schooners. When the first gust off the hills struck us, Daryl rounded up into the wind in spite of her helm being hard up. We quickly stripped her down to jib alone, and thus, with one of the dory oars as auxiliary rudder, managed to work out of harbor without ramming anything.

We saw the last of the Belle Isle fog astern on rounding Cape St. Francis, a couple of hours later, and were very thankful of it. As Bob said: "I *hate* this fog! What you need isn't eyes, but antennae."

By making a straight line of it, down the coast, we were able to reach the inside run through Domino by midnight; then on through a chain of islands to Gready Run. I had been down that way only once previously, but the night was clear so there was little difficulty in picking the right openings, despite the lack of lights and buoys. At noon on Sunday we anchored off the Hudson's Bay Company post of Cartwright, on Sandwich Bay, making a 24-hour run of 120 miles by chart. Our log registered about 150, which must, I think, have been due to the south-flowing current. (To be continued)